November 25, 1961
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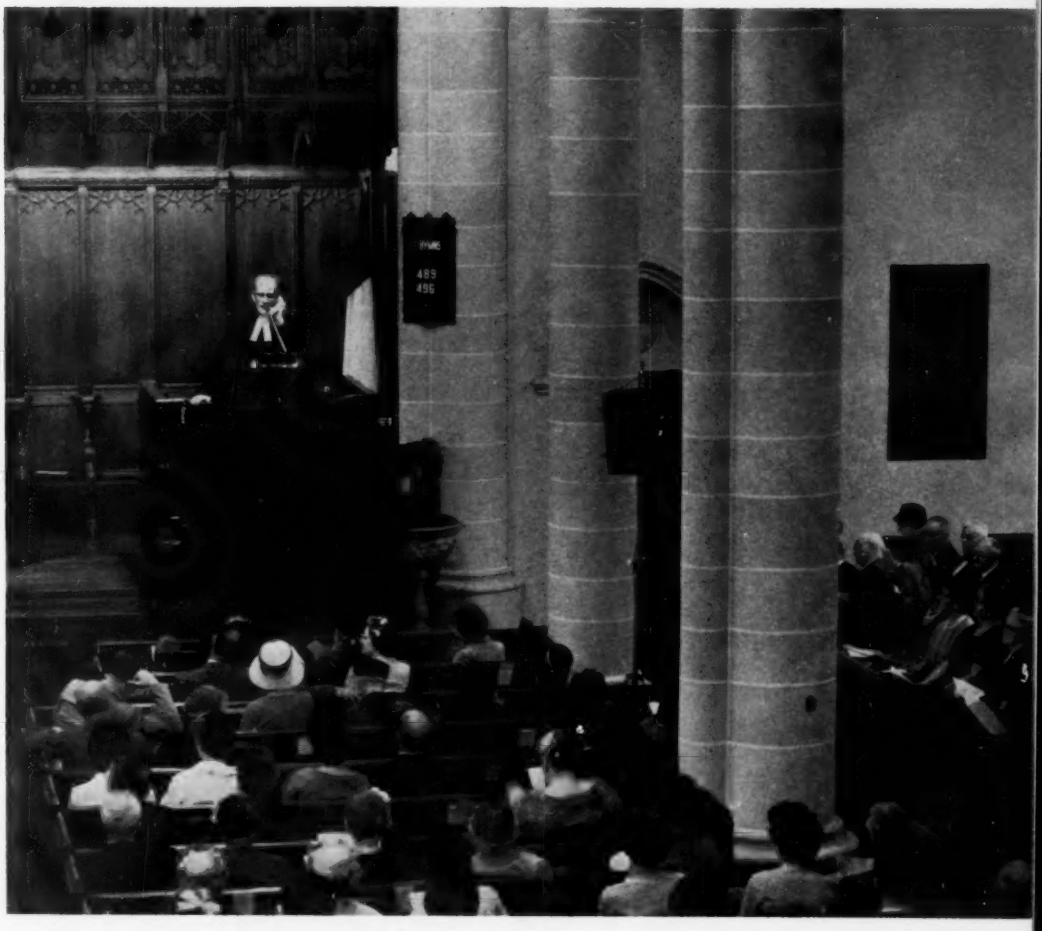
Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY



Dr. J. Charles McKirachan, pastor of the Pine Street Presbyterian Church of Harrisburg, Pa., receives one of three telephone reports from missionaries in Korea, Lebanon and Brazil. Reports were heard by 600 worshippers over loudspeakers and equipment installed by Bell Telephone Co. of Pennsylvania. See p. 46 for story.

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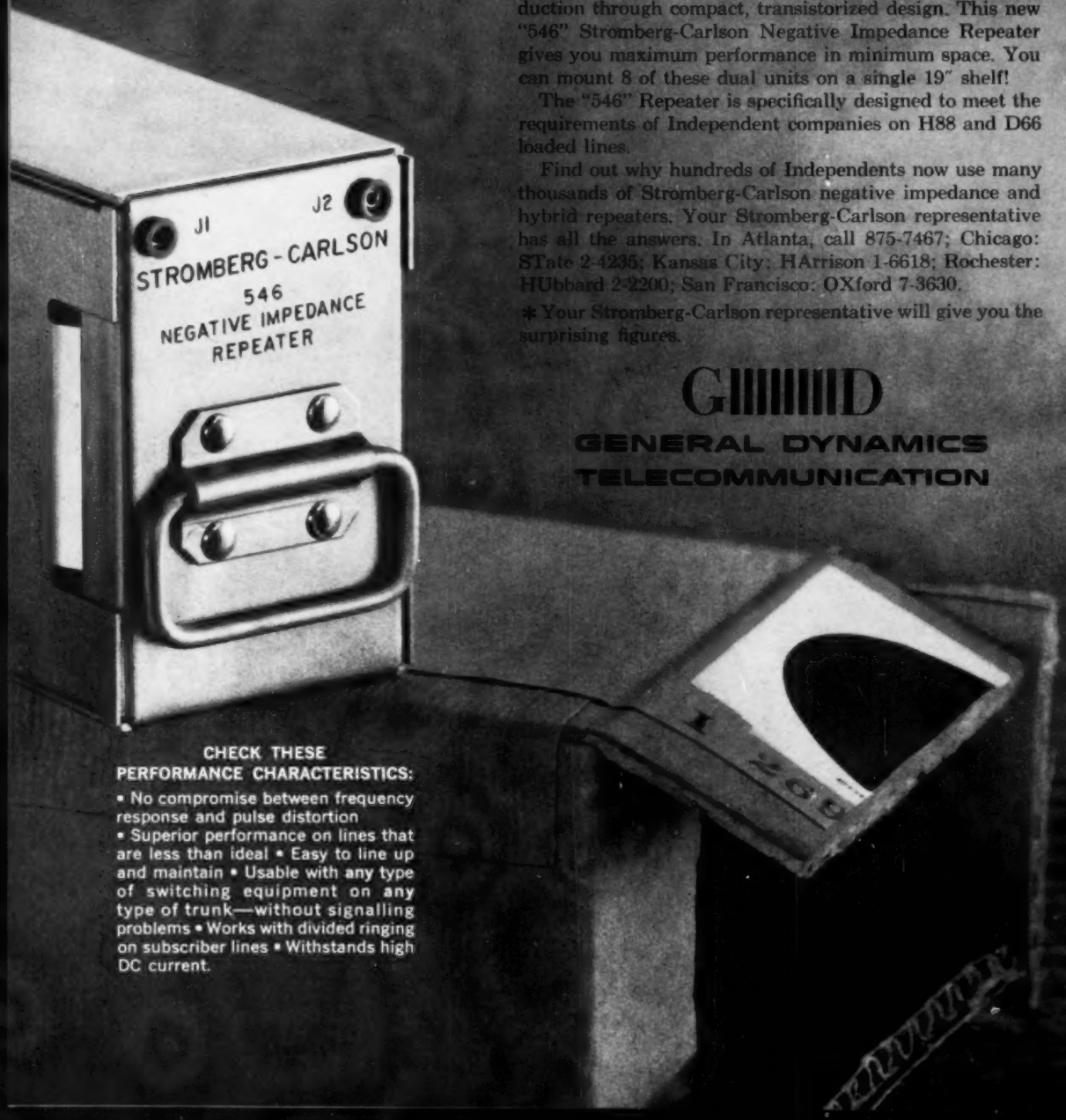

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FLASHES AND PLUGS

ALL DOWN THE DRAIN. There seems to be much sighing in certain quarters for the so-called "good old days," when that very first man, who dared to purchase the first bathtub, was able to enjoy long and leisurely ablutions—prior, some lament, to the introduction of the first telephone in 1875.

Haven't they heard that telephones may now be installed conveniently in the bathroom?

•

AND NOT A FEATHER FLYING. The AP has recently reported that in Gainesville, Ga., "biddy bidding" has gone "long distance."

There and in Alabama cities, poultry processor buyers now participate in auctions via long distance telephones.

Sponsor of this telephone network was the Georgia Poultry Exchange, Inc.

•

ENCHANTING PROSPECTS. Dana Rose, vice president of Michigan Bell Telephone Co., recently addressed the Great Lakes Regional Girl Scout Conference, in Chicago, Ill., and ventured some predictions about American life "day after tomorrow."

In that future day, Mr. Rose said every member of the household will have a separate telephone line, and "each will have its individual signal."

Elaborating on the idea reported by the UPI, Mr. Rose continued, "Instead of a bell, perhaps, chimes will ring when the lady of the house is called; a bugle-call (will sound) for the Girl Scout daughter; and a fog-horn (will blow) for the head of the house."

•

TOWN CRIER. Although rural party lines are being upgraded to handle fewer subscribers, a story from Lillian, Neb. tells of a time when having a multi-party line was a distinct advantage.

It seems that a snowstorm left the community snowbound without telephone connection to the outside world. However, one enterprising resident established a make-shift news service of his own.

He simply turned up the volume on his battery-powered radio and let everyone on his party line listen in on newscasts.

•

FREEDOM FINISH. A famous athlete, who had recently escaped from behind the Iron Curtain, was asked why the Russians excelled in marathon running.

He replied: "We use the border for the finish line."

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

1901 — 60 years — 1961

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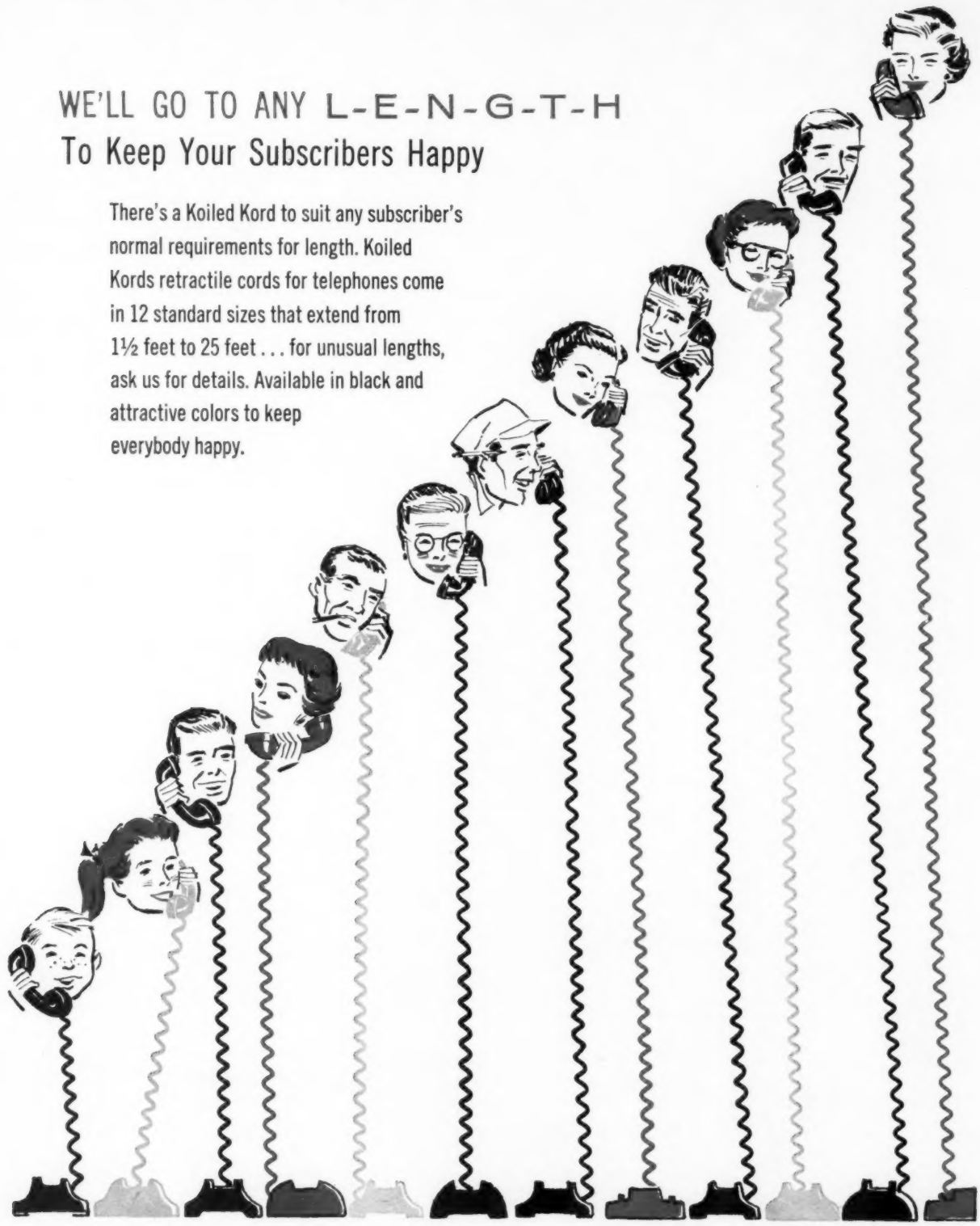

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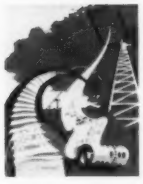

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IN THE NATION'S CAPITAL

BY LAWRENCE J. HOGAN, WASHINGTON EDITOR
and President, Larry Hogan Associates,
Public Relations Firm.

Western Union vice president explains its objections to Ad Hoc Carrier Committee majority report on satellite communications at Senate committee hearings. Washington speculates on Rayburn's successor. New York judge recommends tighter wire-tapping laws.

ON NOV. 8, DURING Sen. Russell B. Long's recent hearings on the satellite communications program, Sam Barr, Western Union's vice president for planning, represented the minority view of the *ad hoc* committee's report (committee is composed of international common carriers appointed to make recommendations for private ownership and operation of the satellite system). He was an articulate and effective witness.

Mr. Barr testified in part:

"We do not believe that the recommendations contained in the majority report of the *Ad Hoc* Carrier Committee to the Federal Communications Commission will resolve a number of the critical issues involved in the implementation and operation of a satellite system . . . and we, therefore, filed a minority statement in the Report of the *Ad Hoc* Carrier Committee. I should like to review this with you.

"Western Union is convinced that the proposed system must assure among other factors that the venture will (1) comprise the most economical arrangement possible, and (2) not be dominated by any one carrier. We do not believe that the plan proposed in the majority report adequately satisfies these requirements.

"Western Union has consistently taken the position that the most desirable method of implementing an operable satellite communications system would be through the medium of a public stock corporation which would own and operate both the satellites and ground stations. . . . We recommended joint participation in the satellite system by common carriers, industry and the general public. We believe that there are advantages inherent in the type of organization that we propose, among which are:

"(1) The broad-based ownership in the corporation by the common carriers, manufacturing and aerospace industries and the general public will eliminate dominance by any one party.

"(2) Including the aerospace and manufacturing industries in the joint venture will make available full use of all expert knowledge in the art.

"The plan proposed by the majority report contemplates the formation of a non-profit satellite corporation, not controlled by any United States carrier, which would represent all United States interests in the development, construction, operation, management and use of the satellites; and further that ownership in the satellites be restricted to United States communications companies authorized by the FCC to furnish communication services via the satellites. In connection with the foregoing condition of ownership, I believe we are rapidly coming to the realization that from both an economic and technical viewpoint, a satellite communication system is still a number of years away.

"Consequently, FCC authorization of satellite use may be several years away and, therefore, participation in the program by any domestic carrier which does not qualify under the majority plan is excluded at the inception of the venture. Western Union believes that there is a definite domestic requirement for satellite operations. This is exemplified by the potential usage of the satellites between the continental United States and Alaska as detailed in the committee's report wherein the requirements are estimated to be 350 voice frequency channels in 1970 and 1,300 voice frequency channels by 1980.

"In addition, we believe that the availability of satellite relay channels between the east coast and the west coast of the continental United States will provide both alternate and supplemental routes to meet the growing demands for such communications. It is our considered opinion that the satellite communication system must be viewed in its proper context with respect to the nation's total communications capability which encompasses both the commercial and national defense needs.

" . . . Under the plan proposed in the majority report, each participant in the joint venture would be permitted to establish its own ground stations. Western Union believes that there are a number of serious disadvantages inherent in this concept, such as:

"(1) The carriers who choose to provide their own ground stations will reflect varying costs per voice channel depending upon the number of such channels that each ground station develops. In this manner the larger carrier would be in a position to show lower costs and quote lower rates.

"(2) Separately owned ground stations may not prove economical in cost per voice channel derived. It appears to be self evident that the addition of ground stations above the minimum number necessary to handle a given traffic volume would add to the cost of the channels required to handle that volume.

"(3) Separately owned ground stations may not provide the most efficient operating performance. The

satellites and ground stations must be coordinated for through operation and it would seem that this could be done most effectively by means of a single management.

"Under the plan proposed by Western Union, the satellite corporation would provide all the channels and would lease them at unit costs which would be the same for all carriers.

"Western Union's position should not be interpreted to indicate a lack of desire to cooperate in the establishment of a workable satellite system, but rather indicates our extreme concern with some of the proposals advocated in the majority report.

"Western Union is in full accord with the objectives established by the President to provide a satellite communication system devoted to the public interest at the earliest date. In summary, we believe this can best be accomplished by:

"(1) Broadening the base of ownership to avoid dominance.

"(2) Making full use of all expert knowledge in the art by including aerospace companies in the joint venture.

"(3) Placing the ownership of both the satellites and United States ground stations under the same management which would result in a minimum per channel cost and improved operations."

Senator Long and Staff Economist Benjamin Gordon questioned Mr. Barr after he read his prepared statement.

SENATOR LONG. Now, if I understand your statement, your first criticism is that the base is not broad enough.

MR. BARR. Correct.

SENATOR LONG. Even though this report were limited to this, you would be one of the insiders?

MR. BARR. Yes, sir.

SENATOR LONG. You would be one of those in the inside and in position to be in while the other fellows are left out.

You feel that the aerospace industries that are going to have to do 95 per cent of the development should be a part of it.

How do you feel about those who operate radio and television stations? Do you think they should have some opportunity to participate?

MR. BARR. As part of the general public participation, I certainly do.

SENATOR LONG. Do you think there should be an opportunity for general public participation?

MR. BARR. Yes, sir.

SENATOR LONG. You are speaking as a representative of a company which has a wide amount of communications facilities. What do you think, where do you think you would be if, as a corporation, you owned the satellite but did not have any ground stations?

MR. BARR. I would be like the man owning a truck but who didn't have any goods to transport. He would have to wait, to wait for somebody to come in and call him and give him a chest of drawers to haul from point to point. It is about in that area.

I would just have an entity that could be used for a certain purpose, and when and as people came to me and wanted to use it, they would pay me for it, but I would not have a communications system.

SENATOR LONG. If you were organizing a system to use a communications satellite, I doubt that you would go into it unless you were sure that you were in a position to send and receive that signal from a satellite, would you?

MR. BARR. No, sir; I would not.

SENATOR LONG. And this proposal here would leave the satellite simply hanging in space without any connection to earth except for certain private groups, I take it, and that you find objectionable?

MR. BARR. Well, the satellite up in space would be used by those entities who owned the ground stations and used the ground stations with the satellite to provide a communications path.

Now, my position is, I think they should both be owned by the same entity. I think your question is directed if they were not, then why would the ownership of the satellite itself be a satisfactory business venture; is that the thought you have?

MR. GORDON. Who will pay for research and development? Research and development will be paid for by the public?

MR. BARR. Certainly by the public.

MR. GORDON. Paid for by the public.

MR. BARR. Certainly it is paid for in every other area.

MR. GORDON. On Sept. 6, representatives of the General Electric Co., in appearing before the *ad hoc* committee, made the following statement—and you were present.

MR. BARR. Yes, sir.

MR. GORDON. And I quote: "If there were no economic considerations involved, we feel 1965 is a reasonable objective to get there. On the other hand, we do feel that this time period could be accelerated by a year or more if the government felt this were desirable, in which case we assume the government would pay the additional cost of approaching it in that manner."

Is this not an admission, Mr. Barr, that speed in establishing a system depends on efforts by the government, and is outside the capabilities of the private sector alone?

MR. BARR. I will take it a step further. Not only speed but the mere fact of establishing such a system depends upon the amount and the speed at which the research and development under NASA is taking place.

This *ad hoc* committee, and the carriers themselves, are not doing anything. They are not doing anything insofar as launching the satellites. It is wholly in the hands of the government.

So we depend upon the government for that complete effort and, therefore, whether it is speed or whether it is just in being at all, will depend upon the government.

MR. GORDON. The government puts it up there.

MR. BARR. Yes, sir.

MR. GORDON. The government does all the research.

MR. BARR. Yes.

MR. GORDON. Both for putting it up there and for the communications equipment.

MR. BARR. Yes, sir.

MR. GORDON. And the profits go to the private companies.

MR. BARR. No, sir. Let us look at this for a minute. Again the regulated industry has a return on its investment.

If this private entity which we are talking about invests 75 million dollars they are allowed to earn 6 per cent on it.

Let us suppose this private entity paid the government for all of its research and development work and came up with 300 million dollars, and it put that money in and paid it out. It would then be allowed to put it on

(Continued on page 48)

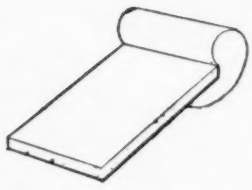
NEXT WEEK

First article in a series on "Transmission Systems for Communications," by Ray Blain.

* * *

Subject is of vital concern to all telephone companies.

The Plant Man's NOTEBOOK



By RAY BLAIN, Technical Editorial Director

RECENTLY the Blain family decided to take a short motor trip vacation and explore some unusual areas along the east coast. So, we loaded the car, called Chipper, our remaining dog, and headed into the deep south.

Leaving Washington, D.C., we crossed the Chesapeake Bay Bridge to the eastern shore of Maryland. This 4-mile bridge is an engineering marvel, and the $1.00 toll charge for an auto is a real bargain. The drive down the Del-Mar-Va Peninsula proved most interesting. This area, made up of parts of three states, retains a certain atmosphere of the past that proves refreshing.

The 21-mile, two-hour ferry ride from Kiptopeake Beach to Norfolk is a relaxing experience. This ferry is to be replaced by a 16-mile bridge-tunnel in 1964. Work is presently in progress on two one-mile tunnels under the shipping channels and on the bridge sections from each shore.

We then travelled on south into North Carolina and over the Wright Memorial Bridge to the "Outer Banks." We stopped at Kitty Hawk and Kill Devil Hill where the Wright brothers made their first airplane flight in 1903. Then we continued on south to Roanoke Island, where in 1585 the first English colony in America was attempted, but lasted only 10 months.

During a second colonizing attempt in 1587, this island was the birthplace of Virginia Dare, first child of English parents born in America. What happened to members of this colony remains a mystery. The site of the settlement is commemorated by the Ft. Raleigh National Historic Site, a unit of the national park system.

Farther south from Nags Head, we crossed the Oregon Inlet by free ferry to Hatteras Island, often referred to as the graveyard of ships. From Whalebone Junction, at the southern boundary of Nags Head, some 70 miles southward through Ocracoke Island, the National Seashore Recreational Area preserves 45 square miles of beach land. Congress provided that only those parts of the area which are especially adapable for such recreational uses as swimming, boating, sailing, fishing, and similar activities should be developed. It further provided that the remainder of the area be permanently set aside to preserve the plant and animal life and the primitive wilderness shoreline.

After spending the night at a modern motel near the lighthouse on Cape Hatteras, we crossed the Hatteras Inlet by another free ferry to Ocracoke Island. These ferries are landing type craft operated by the state of North Carolina. Each carries 10 to 12 cars and makes the run in about 50 minutes.

Ocracoke is charming and quaint. It grew up not as a resort, but as a small fishing village. It is 18 miles long and from ½ to 2 miles wide. Ocracoke Village, with a population of 500, is near the southern tip of the island. The remainder of the island is uninhabited and the island is said to be a fisherman's paradise.

A four crossarm toll lead enters Nags Head from the north. This lead reduces to two crossarms into Cape Hatteras and one crossarm into Ocracoke Village. The inlets are crossed by submarine cables. The telephone system that serves the village of Buxton on Cape Hatteras is operated by the Norfolk & Carolina Telephone & Telegraph Co. The exchange at Ocracoke is a part of the Carolina Telephone & Telegraph Co., system.

From Ocracoke we boarded a paid ferry that carried 20 cars, and after a pleasant four-hour ride, we arrived at Atlantic, N. C. We spent several days at Moorehead City, a pleasant community noted for its excellent beaches and fishing facilities.

We next travelled inland leisurely through North and South Carolina, enjoying the scenery and observing numerous neat little villages, where the residents are obviously enjoying life. Naturally, we also observed telephone plant along the way.

We spent some time at Asheville, N. C., one of the most famous mountain resorts in the east. The highlights of this stop were visits to the Biltmore House and Gardens and Chimney Rock Park. Rather than climb the stairs to Chimney Rock from the parking lot, we paid 25 cents and rode an elevator to the top of the 258-foot elevation. The beautiful view from the top was well worth the price of admission.

We drove the Blue Ridge Parkway north from Asheville to Roanoke, Va. This is a most enjoyable drive, over a good road, and with beautiful mountain scenery all the way. From Roanoke we drove up through the Shenandoah Valley to Falls Church, Va., our home.

No matter how enjoyable any trip may be, we are always pleased to be home.

Our dog Chipper enjoyed every minute of the trip. He loves motels and is always anxious to get inside and inspect each new one at every stop. When a motel has wall to wall carpeting and TV, he wags his tail in approval. If they do not have these luxuries, he sulks. Perhaps this proves that even dogs need an occasional vacation, but that they insist on modern luxuries.

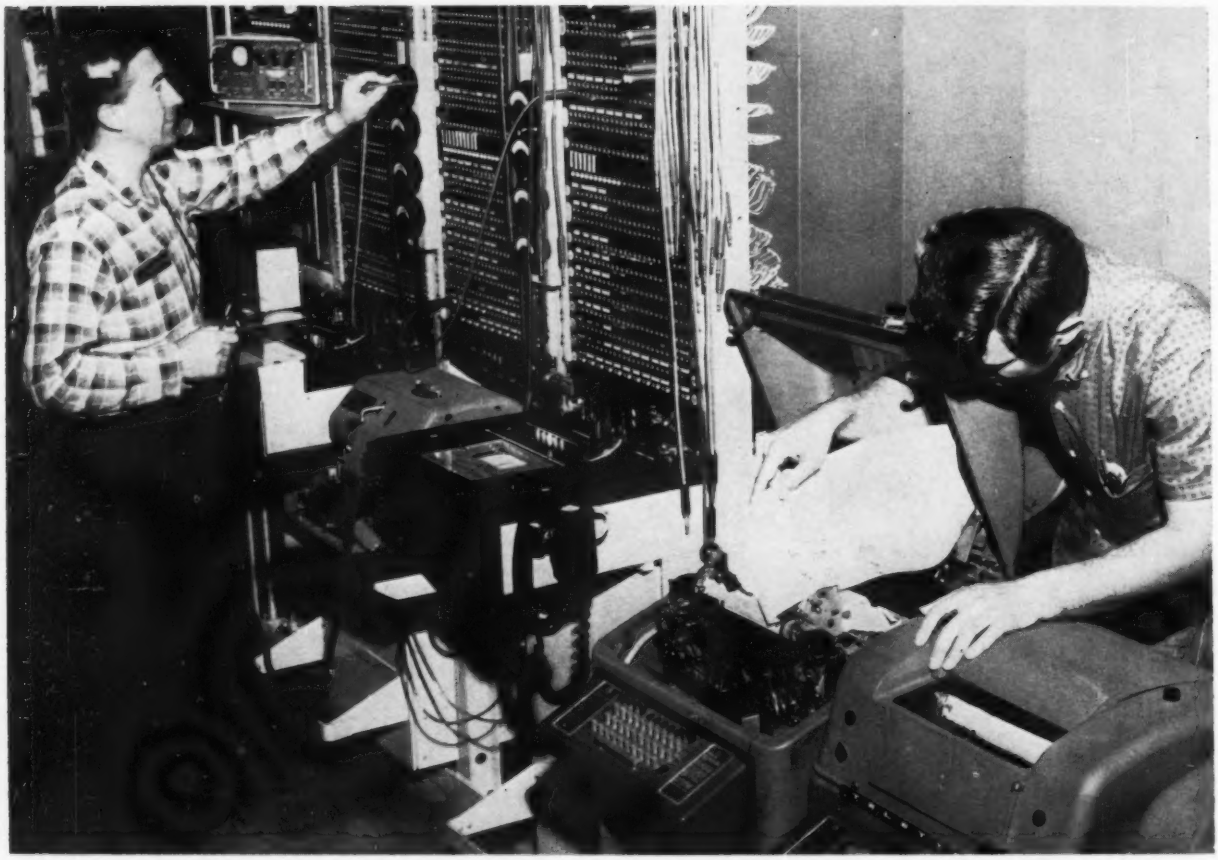
•

The General Telephone System has recently adopted a new system standard—two-tone motor vehicle color. This, however, is considered an evolution rather than a specific objection to all-white.

Some months ago, all-white vehicles were adopted by the General companies on an interim basis, and a particular shade of white was made available by the major automobile suppliers as a standard color. At that time, considerable publicity was given to the advantages of such treatment over the conventional all-green. The previously mentioned standard white color is now incorporated in a new two-tone white and gold treatment which was adopted recently as the General System's standard motor vehicle color and which was based upon the recommendations of an industrial designer.

The majority of the reasons which

(Continued on page 38)



"SURFING" AT VANDENBERG. Santa Maria, Cal. switchmen, Leonard Hollinger (left) and Jerry McHale, check Surf central office equipment at Vandenberg Air Force Base. They're assigned full-time to Surf central office, which is part of Santa Maria district headed by J. J. McGarry.

COMMERCIAL COMMUNICATIONS

Key to Missile Launchings

By PHILLIP I. MYERS*

"SHE WENT RIGHT down the pickel barrel"—this was the U. S. Air Force lingo which described the successful flight of the first ballistic missile fired from Vandenberg Air Force Base on Dec. 16, 1958. The mighty Thor which blasted off from the new missile base almost three years ago was a prelude to the development of the free world's missile muscle and the establishment of Vandenberg Air Force Base as this country's Number 1 military missile site.

Vandenberg's development, as well as the development of other missile sites such as Florida's well-known Cape Canaveral, has been speeded up, thanks to capable, efficient communications networks fashioned and maintained by the country's commercial communications companies.

Military communications requirements are being, and will be, met successfully by these firms which are proving invaluable to the continued progress of our national defense and space programs.

In 1959, Vandenberg's importance zoomed to new heights when the first Atlas missile was fired by the Air Force. Reported William Misslin, man-

* Mr. Myers is editor of the General Telephone Co. of California News.

aging editor of the Santa Maria *Times:* "As the final 15-minute countdown started, there were only a few white flecks of clouds in the sky, and none to the west where the missile was aimed. A gray haze formed a backdrop for the 83-foot-high missile as it stood alone on the launching pad, its oil derrick-type gantry rolled back out of the way.

"As the liquid oxygen and RP-1, a kerosene-like hydrocarbon fuel, were pumped into the vehicle, it started to 'fume' and 'smoke' . . . When the count reached T minus 90 seconds there was a scheduled hold . . . it lasted about 20 minutes . . . and the count resumed. On down it went, the tension mounting with each announcement. Then the shout came from observers, just 9,200 feet from the launch pad. 'There's fire in the tail!'

Ball of Flame

". . . (It) quickly exploded into a large orange ball. Slowly, the powerful engines, capable of developing 360,000 pounds of thrust, raised the 250,000-pound missile upward. Gradually it began to gain speed, and as it cleared the gray haze, it appeared as a huge silver bullet pushed by a ball of flame.

"Higher and higher it went, straight up into the heavens as gasps of admiration and amazement escaped from the onlookers.

"As it cleared the horizon, the noise, like that of a hundred freight trains, increased in intensity. There were sharp cracks in the thunderous sound, and then the noise washed over the observation site, and all that was left was the silver bullet and the ball of flame."

That Atlas missile plunged towards its selected target 4,400 miles away near Wake Island . . . it was the beginning of an intensive missile program which would keep the free world in step with Russian space-age advances.

Executive Agency

Satellite development programs at Vandenberg AFB fall within the responsibilities of the newly created Space Division (BSD). Both of the above divisions are a part of Air Force Systems Command (AFSC).

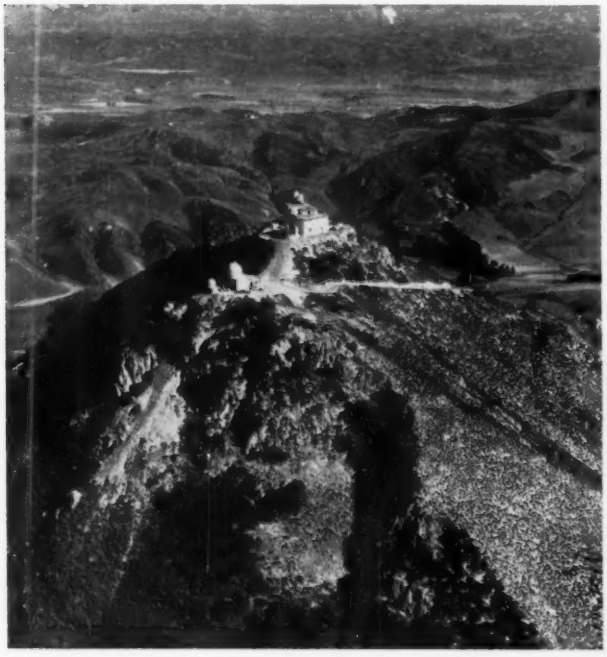
The Strategic Air Command (SAC), through the First Strategic Aerospace Division (formerly First Missile Division), is the executive agency at Vandenberg AFB for the conduct of operational ballistic missile programs.

Along with the military, there also are many civilian agencies involved in getting missiles off the ground. One of the most important aspects of the Vandenberg operation is the off-base communications network, which is provided and serviced by General Telephone Co. of California.

Communications are an all important factor in a missile launch and at Vandenberg the substantial proportion of both base and off-base communications is required in direct support of these missile operations.

Communications Problems

When Vandenberg was activated by the Air Force early in 1958, many communications requirements of a new and unique nature were met by General of California, such as: a private-line network using complex data apparatus; a teletype network requiring automatic selection of stations, and a



RADAR WATCHDOG. These radar buildings, at Naval Missile Facility, Point Arguello, Cal., are 2,100 feet above sea level. They house electronic equipment for "precision tracking" radars used to track missiles and satellites launched into Pacific Missile Range from Vandenberg. Data received from radar is processed by computers.

POWER FOR PEACE. Strategic Air Command is dramatically emphasized by combination shown here—one of SAC's long-range jet bombers flying over Vandenberg AFB Atlas intercontinental ballistic missile emplacement. Both weapons stand on 24-hour combat ready alert.

telephoto circuit equipped with special signaling arrangements.

In addition, the company is presently making arrangements so that inward-outward dialing on a seven-pull basis will be available at Vandenberg to both Santa Maria and Lompoc.

This operation is to be accomplished by assigning selector levels in Santa Maria and Lompoc exchanges to Vandenberg. Subscribers in both exchange areas will access Vandenberg stations directly by dialing 86-6XXX or 86-4XXX. To reach Santa Maria or Lompoc, Vandenberg AFB stations will dial the published directory number.

Santa Maria District

Surf central office is located at Vandenberg. It is part of the Santa Maria district headed by J. J. McGarry. This district is responsible for installation and maintenance of all lease-line equipment.

Exchange service for 1800 Capehart homes (inhabited by military families) on the base is included in this service. Through Surf central office, General furnishes off base facilities—exchange service, long distance to base housing and contractors, and various special services.

All Vandenberg facilities are tied into the Surf central office. Special equipment installed at the office includes microwave, a private-line toll telephone testboard, and a private-line toll telegraph testboard.

MOBILE MISSILE FINDER. One of numerous optical tracking units at the Naval Missile Facility, Point Arguello, Cal., this mobile camera unit photographs missiles and satellites launched into the Pacific Missile Range. Using a 100-inch lens, the unit, which normally uses 35 mm film, can track a vehicle in excess of 100,000 feet.

Twenty-Four Hour Service

PBXmen and installers serve Vandenberg from Santa Maria and Lompoc, respectively. The Surf central office is manned 24 hours a day by eight switchmen and one foreman.

Communications activities at Vandenberg are largely stimulated when a "big bird" is about to be launched. Here's a capsule version of what happens: Vandenberg notifies Gen Tel of all impending missile launchings at least 24 hours in advance.

Santa Maria operating forces then clear direct trunks to Los Angeles, where long-distance calls are directly routed to locations such as Offut Air Force Base (SAC headquarters), Omaha, Neb. and to various newspaper and radio stations throughout the country. Newspaper personnel receive a designated group of paystations in the press building.

Communications at Vandenberg run smoothly now, but two years ago it was a different story.

Traffic Study

During the middle of 1959, a traffic study was conducted to determine the adequacy of Vandenberg's switchboards; and a decision was made by military personnel to up-date their communications system.

Along with a vast number of lines and terminals for on-base communications, Air Force officials decided to have installed eight Automatic Electric keypulse PBX positions and two information positions for handling all incoming and outgoing traffic.

Base telephone extensions zoomed from approximately 1,500 during the first six months after the site was reactivated in 1957 to more than 4,000 extensions today. Vandenberg communications office predicts more than 7,000 extensions by the end of this year.

Current construction programs at VAFB include, the Titan, Thor and Atlas facilities using above-ground complex launch pads; and the new complex arrangement using a silo-type operation, connected with the Minuteman program, which allows subterranean firing.

Point Arguello

The Naval Missile Facility at Point Arguello, several miles west of Lompoc, is the main launch, track and control site of the Pacific Missile Range which is headquartered at Point Mugu, Cal.

The Navy at Point Arguello provides numerous tracking and range-support services to all users launching missile and space vehicles from Vandenberg Air Force Base and the Naval Missile Facility. Normal support includes range clearance and scheduling, missile-in-flight safety, meteorology, telemetry, radar and optical tracking, impact prediction, range timing and frequency interference control.

TITAN SILO LAUNCHER. Lowered into silo launch facility at Vandenberg, a Titan ICBM sees sunlight as 4-foot thick protective roof is rolled back. Titan can be fired from within the 160 foot deep silo. Mouth of silo is protected from heat and blast generated by the Titan engines by heat-resistant tile.

Numerous agencies including the National Aeronautics and Space Administration (NASA), U. S. Air Force, Atomic Energy Commission, U. S. Marine Corps and Naval Research Laboratory use Arguello Facilities for various types of space programs.

Tracking Network

Point Arguello is an important link in the world-wide tracking network for Project Mercury—a scientific manned spacecraft program under the direction of the National Aeronautics and Space Administration. Arguello is one of six command stations that will track the orbiting astronaut while he is in orbit around the earth.

One of the seven astronauts in training for Mercury may be at Point Arguello during launch and recovery of the capsule. This astronaut will have direct voice communications with his

(Continued on page 38)

Virginians Asked to Renew Fight on Excise Tax

By RAY BLAIN

THE CREED of the Virginia Independent Telephone Association (VITA) is as follows: "It is the object of this association to bring together in a firmer union all Independent telephone companies in the state of Virginia for the purpose of promoting and aiding Independent telephone interest in the state."

The creed was certainly exemplified during the 27th annual convention of this association held in Roanoke, on Oct. 25, 26 and 27. Seldom has the writer been privileged to observe a more dedicated group working for a common cause.

Conducting the affairs of the association is not a one-man show, according to Virl L. Choate, this year's president. He stated that of the 49 Independent operating telephone companies in Virginia, 32 are members of the Virginia Independent Telephone Association. The member companies operate 242,000 telephones and the nonmembers about 10,000.

President Choate emphasized that the association should continue to work for corrective action on two tax problems of concern to the industry —excise taxes and tax credits. The wartime discriminatory excise tax on communications, he said, should be abolished. President Kennedy in his message to Congress urged incentive tax credits for certain types of businesses, but eliminated utilities. This question will be raised again in Congress next January, and the VITA was urged to lend its support towards making telephone companies eligible for this tax benefit.

Frank G. LaPrade, president of the United States Independent Telephone Association, spoke as follows with reference to the activities of the national group:

"Almost every telephone man will agree, I think, that the USITA has had a magnificent record of accomplishment in the field of legislation. Indeed, it would be hard to find another trade organization that has a better record, or even one as good. But there is always room for improvement, and the directors and officers of the national association strongly feel that future legislative activities can be even more productive if we do certain things.

"Recently the executive committee of the board of directors considered what the USITA can do to make its legislative work more effective. The group drew up a sort of white paper, listing several ways of accomplishing this objective.

"It was generally agreed that the national association should encourage state associations to adopt a more militant role. From many of the state associations, we receive the utmost cooperation. From others, we receive a moderate degree of help, and from some, we receive practically no help at all. Our relationship with all state associations is warm and cordial, and we are the first to recognize that the smaller associations which cannot afford to employ full-time secretaries, naturally, are not geared to accomplish as much as the larger associations which have executive direction.

"We are hopeful that next year, and the years thereafter, we can stimulate a more healthy and lively interest in national legislative matters on the part of state associations and their boards of directors. It is the managing bodies at the local level to whom state association secretaries must look for direction to participate and cooperate in seeking the promotion or defeat of Congressional legislation.

"And let me say, parenthetically, that with the anti-business attitude of the present administration prevailing as it does in the nation's capital, it is more important than ever that we be alert to see that no stone is left unturned to defeat legislation harmful to our interests specifically, and to the private enterprise system generally.

"If there is any single thing that I would like to emphasize, it is the need that our association has to obtain greater and more enthusiastic grassroots support. This means support not only from individual Independent telephone companies, but from their area service clubs, chambers of commerce, their subscribers, their stockholders, and their boards of directors.

"Companies can help by incorporating in their reports to their stockholders references to legislative matters that are of importance to the health and welfare of telephone companies, the telephone industry and the telephone-using public. Stockholders' reports are a source of contact with the grassroots that are all too little used for this purpose.

"And much can be accomplished through the use of well-chosen remarks in introducing our new motion picture, 'The Independent,' to

Officers and directors of the Virginia Independent Telephone Association. Seated, left to right: Warren B. French Jr. of Edinburg, second vice president; Virl L. Choate of Martinsville; Charles P. Lamm of Charlottesville, president; A. G. Stogdale of Staunton, first vice president; W. H. Scholl of Bluefield, W. Va., secretary-treasurer; C. J. Logan of Tarboro, N. C., and L. E. Beydlev Jr. of Harrisonburg. Standing, left to right: P. T. Campbell of Hanover; E. B. Fitzgerald Jr. of Gretna; A. E. Reynolds of Bristol, Tenn.; Stanley A. Owens and C. Lacy Compton both of Manassas; and E. C. Garnett Jr. of Lexington.

the many civic groups in (your) community.

"State associations can help by setting up well-qualified legislative committees that can be called into action when there is a conflagration on the national legislative front. State associations also can be of assistance by creating public relations committees, or speech-making committees, whose duties would be to appear before service clubs and other public bodies to discuss the nature of legislation affecting them and the telephone using public. Individual companies can help by drawing attention to important legislative problems in their house organs and bill inserts. Many of our companies make a really worthwhile contribution in this respect."

"Equity Financing and What Your Financial Statement Should Tell You" was the subject of an interesting talk delivered by J. C. Wheat Jr., managing partner of J. C. Wheat & Co., Richmond. He cited the bitter experience of Independent telephone companies back in the depression period of 1930 to 1933 when many lost 21 per cent of their stations which often represented over 25 per cent of their revenue. During this period, some companies lost over 65 per cent of their net income.

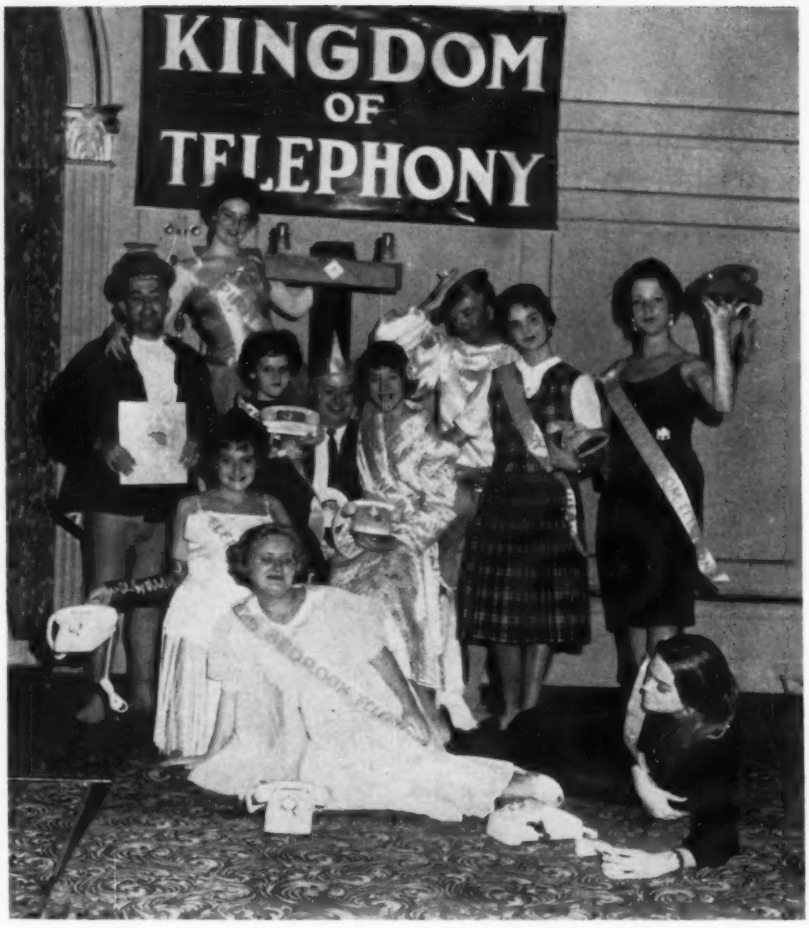
However, Mr. Wheat indicated that telephone companies now have more built-in stability than they had back in the 30's, and they need not fear that this sad experience will ever be repeated. Most present-day business concerns could not operate without telephone service.

J. E. Hite, staff engineer-transmission for the Chesapeake & Potomac Telephone Co., Richmond, gave an interesting talk titled: "New Arts in Telephone Communications." He reported that the first of 30 satellites that will eventually give the world intercontinental telephone service will probably be launched next April. This satellite will cost about 6 million dollars, will be 34 inches in diameter and will weigh 100 pounds.

It will provide four two-way channels and each channel will furnish 600 circuits. One channel could be used for television. Mr. Hite pointed out that the use of satellites is only an extension of the microwave system. The same results could be obtained by placing a tower in the middle of the Atlantic Ocean to relay signals between the United States and England. The joker in this arrangement, however, is that such a tower would have to be 475 miles in height, he said.

Among communication devices of

(Continued on page 40)



Participants in one-act skit presented at the Virginia convention depicting the importance of merchandising and sales in the "Kingdom of Telephony."

TELEPHONY'S ELECTRONICS SECTION

BY PAUL E. MURPHY, ELECTRONICS EDITOR

CARRIER TECHNIQUES

INTERNATIONAL Telephone & Telegraph Corp. recently announced the development of a new and economical carrier telephone system. The new system was explained as being capable of providing for 300 simultaneous telephone conversations over a pair of coaxial-tubes only .163 inch in diameter.

The standards of CCIT are met for channeling and channel quality, and the multiplex is designed in the 60 to 1,300-kilocycle allocation. Pilot channels are included to designate fault location and alarms.

Transistorized repeaters spaced at approximately 12,000-foot intervals along the cable amplify the signals and are supplied by direct current over the coaxial tubes.

Installation of the new system has been made by two European affiliates of ITT in Sardinia.

DATA PROCESSING

TELEPHONY'S "Electronic Section" of Oct. 29, 1960 contained an article entitled "The Wizard Room." It was a review of an article on electronic data processing by R. C. Bechtel that appeared in the employe magazine of the Bell Telephone Co. of Pennsylvania.

More specifically the article discussed a large-scale electronic data processing proving grounds for the Bell System located in the Bell of Pennsylvania accounting building at Conshohocken, Pa.

Selected for this trial was an IBM 7070 computer for handling the billing and collecting job. Two IBM 1401 "satellite" computer systems were also to be used for conversion of information from paper tapes and punched cards onto high-speed magnetic tape, and to prepare the printed output from magnetic tape on high-speed printers.

Data from the reels of magnetic tape was to be sorted, rated, summarized, assembled, posted, and prepared for billing at high speeds on the IBM 7070 main computer. The records for all customers being served would be maintained on the large files of magnetic tape.

The advantages to be gained through the use of electronic data processing were discussed; and it was observed that this operation was to be a large-scale one, as the Conshohocken accounting office handled approximately 300,000 accounts. It was further observed, however, that as the computer art

Installation of an unattended transistorized repeater in Sardinia is being pursued by European engineers of International Telephone & Telegraph Corp. The repeater will be used to amplify signals derived by a new carrier system of up to 300 channels and operating over coaxial cable thinner than a pencil.

advances many operations being performed manually today by smaller telephone companies will be performed economically by machine tomorrow.

Nearly a year has elapsed since this equipment was initially installed. What progress has been made at this electronic data processing center? J. M. Wier of the Bell Telephone Laboratories, in an article appearing in the October issue of "Bell Laboratories Record," discusses the new electronic data processing study under way in the Bell System.

"The first two central offices went into EDP (Electronic Data Processing) operation last December; by mid-June, about 25,000 customers were being serviced by the equipment," explained Mr. Wier. The balance of the 300,000 accounts in this suburban Philadelphia accounting center will progressively cut over to EDP operation by the end of 1961.

"On an average day, when the system is in full operation, it will rate 300,000 calls; post 15,000 payments; prepare 15,000 bills; and review and update each of the 300,000 customer account records," Mr. Wier said. He also explained that, "Fifteen thousand treatment notices, such as service discontinuances, over-due bills, or service transfers can also be prepared daily."

As to the future of EDP within the Bell System, Mr. Wier said that other Bell companies are installing equipment to perform similar functions and that present planning and scheduling will provide for at least one city in each of nine companies participating in the EDP in whole, or in part, for billing and collecting by the end of 1962.

FUEL CELL ELECTRICITY

ARMOUR Research Foundation of Illinois Institute of Technology has announced the development of a new highly efficient fuel cell capable of supplying electrical power at high temperatures and in radiation environments of outer space.

A new fuel cell developed by Armour Research Corporation produces slightly less than a volt per cell and up to 100 amperes per square ft.

Dr. Jack Bregman, Armour's supervisor of physical chemical research, and Dr. Andrew Dravnieks, scientific advisor, described the cell as one using hydrogen and oxygen for fuel and composed of an inorganic ion-exchanging membrane which operates at higher temperatures than the organic types now in use. The stability of the organic membrane, according to the inventor, drops off sharply at 70 degrees centigrade, while with the inorganic material, increased power can be obtained at 100 degrees centigrade.

The two inventors described the new fuel cell as one that offers an unusually high energy-to-weight ratio. It was also explained that inorganic materials do not require water to maintain stability; this, therefore, facilitates lighter cells as required for space applications.

According to foundation scientists, experimental cells about the size of a quarter have been produced which provide .95 volts open circuit. The inorganic material is capable of attaining up to 100 amperes per square foot, while, on the other hand, the organic cell can attain approximately 35 amperes, it was explained.

Armour scientists explain briefly that hydrogen causes a reaction on one side of the membrane which gives off electrons, and oxygen on the other side creates a deficiency in electrons, thus hydrogen ions moving through the inorganic membrane complete the circuit and a flow of electrons from the anode to the cathode takes place, completing the reaction.

Application other than so-called space usage might include power packs for portable communications equipment.

ELECTRONIC TEST EQUIPMENT

THE NEED for the use of adequate and flexible test equipment for the maintenance of telephone communications apparatus is apparent. In order that "in the field" tests can be easily accomplished, it is imperative that in a large degree, test instruments must be designed to be portable and miniaturized as much as possible. Also, since test equipment used in this manner be-

comes subject to considerable abuse, such instruments should be as economically priced as possible, yet practical to the extent that measurements are reasonably accurate.

Several manufacturers provide test equipment that meets these specifications and, in some instances, even a greater economy may be realized by purchasing the instruments in "kit" form.

Transistor and circuit tester.

One company recently announced the production of two new test instruments—a new transistor and circuit tester, and a new vacuum tube voltmeter.

The new transistor and circuit tester is said to provide for significant measurement of actual transistor parameters as well as all the VOM ranges necessary in the maintenance of transistorized equipment.

Transistor measurements that are made possible include ICBO and ICEO with separate ranges for signal and power transistors, DCB (directly) and ACB (indirectly). Specifications for the VOM circuitry include: DC current ranges 50 and 500 micro-amps, 5, 50, and 500 milli-amps; DC voltage ranges 5 and 50 volts; Resistance ranges R x 1 (0 to 2 kilohms, 12 ohms center scale), R x 100 (0 to 200 kilohms, 1200 ohms center scale), and R x 10,000 (0 to 20 megohms, 120 kilohms center scale).

Vacuum tube voltmeter.

The instrument is enclosed in a black bakelite case 6¾ inches high x 5¼ inches wide x 3 inches deep.

The vacuum tube voltmeter provides for direct readings of ac and dc voltages to 1,500 volts over five ranges and of resistances from .2 ohms to 1000 megohms in five ranges.

Design permits calibration without removal from the case, and the instrument features complete overload protection, it is said.

Further specifications to include: Input impedance 11 megohms on dc and 1 megohm on ac; voltage ranges 0-3, 15, 75, 300, and 1,500 volts on ac and dc and may be extended to 30 kilovolts through the use of a high voltage probe; frequency response 30 cps to 3 megacycles and to 250 mc. with probe.

Both instruments may be obtained in either kit form or fully wired and tested.

RADIO COMPONENTS

IN THE INTERCONNECTING of various components of radio communication equipment, a large variety of connectors and adaptors are required. In "tying" in these various components, considerable attention must often be given to such phenomenon as VSWR (voltage standing wave ratio) and losses due to leakage.

As higher frequency allocations are set aside for the numerous users of communication systems, new types of plugs, connectors, and adaptors must of necessity be designed to meet the effects resulting from the higher frequencies.

The General Radio Co. has recently developed new versions of the familiar Type 874 Coaxial Connectors, including locking cable and panel, and recessed locking panel types, it was recently announced.

While retaining the hermaphrodite feature of the 874's, the new connectors are fully compatible with the non-locking types, it was explained.

It was stated that for both locking and non-locking versions the VSWR is lower than the type N, C, BNC and UHF connectors, up to 8 Gc; also, higher voltages and lower leakages than could be tolerated formerly for both types.

Instruments that are equipped with the newer type recessed-locking connectors can be fitted quickly with locking adaptors for conversion to other connector systems. This feature permits the manufacturer to readily supply any type of connector. Many instruments such as signal-and-sweep generators already have been equipped with the new-type connectors, thus gaining these added features.

NANO-SECOND PULSE SAMPLING

HEWLETT-PACKARD Co. has recently announced the availability of a new sampling oscilloscope which gives calibrated, high resolution measurement of nano-second pulse phenomena.

The new Model 185B oscilloscope features conventional controls, direct reading and bright-trace observation, and a conventional 5-inch mono-accelerator cathode ray tube (CRT), the company reports.

The new oscilloscope, Model 185B, developed by Hewlett-Packard Co. gives calibrated, high resolution measurement of nano-second impulse phenomena. Added applications include measurements of switching speeds of various components.

It was explained that when the newly developed oscilloscope is equipped with the Model 187B Plug-In Dual Trace Amplifier, a pass-band of from dc to 1000 megacycles is obtained, can be synchronized up to 1000 megacycles, and will permit full screen presentation of signals from .3 nano-seconds to 100 micro-seconds.

Applications for the new Model 185B oscilloscope, in addition to serving as an analyzer for nano-second and micro-second impulses, include: measuring switching speeds of diodes, computer memory devices, and transistors; making permanent X-Y plots, and measuring uhf voltage amplitude; determining pulse jitter; analyzing coaxial connectors; analyzing radio frequency carrier signals by directly viewing the r-f.

Further versatility of the Model 185B is also possible through the use of a wide range of accessories.

APPLICATION NOTES

HEWLETT-PACKARD Co. has recently announced the availability of "Application Note 53" describing a pulse-reflection technique for providing a direct reading of transmission line characteristic impedance using a sampling oscilloscope.

The "Application Note" briefly discusses and reviews transmission line theory, and then eleborates on the equipment arrangements and types of reflections encountered due to discontinuities of inductance, capacitance, and resistance.

In addition to measuring the impedance of lines as short as 1 foot, the technique is useful for minimizing reflections in any device through which a signal must pass.

Equipment suggested throughout the measurement technique includes a sampling oscilloscope and a pulse generator.

Also available from Hewlett-Packard is a 32-page catalog of microwave instrumentation. The catalog is a special presentation dealing with the generation, transmission, and measurement of microwave phenomena. Photographs of typical equipment arrangements for making microwave measurements are included as a part of the catalog.

Both the "Application Note 53" and the catalog on microwave instrumentation may be obtained by writing Hewlett-Packard Co., 1501 Page Mill Rd., Palo Alto, Cal.

MEET ON ELECTRONIC STANDARDS

WORLD STANDARDS agreement on electronic components, equipment and procedures, including the electronic aspect of computers and data processing machines was the aim of nearly 200 representatives from 16 countries who were to have met in London, England, on Nov. 13.

The meetings, organized by the International Electrotechnical Commission (IEC), were to continue for two weeks at British Standards House. Visitors included Americans and Russians.

The delegates were to discuss world standards for:

(1) Sockets and accessories for electronic tubes and valves.
(2) Electromechanical components for electrical equipment.
(3) Environmental testing procedure for electronic components and equipment.
(4) Printed wiring.
(5) Computers and data processing.

In all, seven IEC committees were scheduled to meet. Their chairmen were: F. Dumat (France), H. Mayr (Italy), E. F. Seaman (USA), R. W.

Kersey (U. K.), L. van Rooij (Netherlands) and Dr. A. B. Credle (USA) In addition to the full committees, a number of working groups were set up.

G. De Zoeten, the Dutch president of the IEC, was to be among the visitors. He was to take the chair at a meeting of the IEC's Advisory Committee on Electronics and Telecommunications.

Arrangements were made for delegates to visit the BBC television center, to tour several factories manufacturing radio and electronic apparatus, and to examine BOAC's operational and maintenance organization at London airport.

IRE Human Factors Congress Issues Call for Papers

The Institute of Radio Engineers Professional Group on Human Factors in Electronics will sponsor an International Congress on Human Factors in Electronics to be held May 3 and 4, 1962 at the Lafayette Hotel, Long Beach, Cal. The title of the meeting is "Man-Machine Engineering: Methods, Models and Measurements."

The program of the congress will be representative of the scope of the PGHFE as an interdisciplinary group of engineers and scientists.

Papers that clearly deal with problems of human factors are solicited in the following areas: Communications, automatic control, biological science, computers, cybernetics, electrical engineering, information theory, mathematics, medicine, and psychology.

Submitted papers should present new research findings, either experimental or theoretical with the experimental implications called out, which serve as illustrative examples of the power and necessity of an interdisciplinary approach to the human factors area.

Submitted papers should not exceed 30 minutes of presentation time as a general rule although significant contributions of any length will be considered.

Two copies of an abstract not exceeding 300 words should be sent to John W. Senders, technical program committee chairman, Minneapolis—Honeywell Regulator Co., 2600 Ridgeway Road, Minneapolis 40, Minn. prior to Jan. 1, 1962.

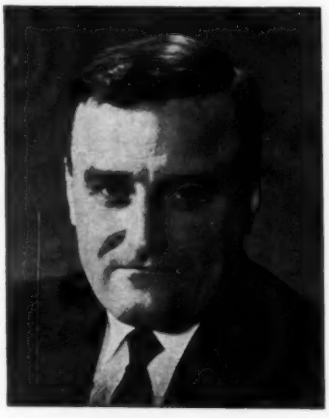
Initial evaluation of prospective papers shall be made on the basis of the abstracts. Authors whose papers are tentatively accepted on this basis will be requested to submit final manuscripts before Feb. 15, 1962. Final selection of papers will be made only after the complete manuscripts have been evaluated.

Advertisement

How To Get Your Money's Worth From Electronic Equipment!

THE TELEPHONE industry is rapidly taking advantage of new developments in electronics. This is only natural. Since the telephone first came into existence, telephone men have been quick to recognize the value of new developments.

Thus it is not surprising that the industry is using more and more electronic equipment. Mobile radio is used to connect telephones in cars, trucks and other vehicles. Microwave relay links are used in place of wire and cable in many places. Electronic carrier



Carl E. Smith, E. E., President Cleveland Institute of Electronics

circuits and repeaters result in better utilization of existing (and proposed) facilities.

All of these improvements are available today. Tomorrow will see even greater advances. The manufacturers of telephone equipment can be relied upon to give you the kind of equipment you need to fulfill your obligations to your subscribers.

However, you should keep in mind a fundamental principle of management . . . a chain is only as strong as its weakest link. Thus, no matter how big or small you may be, your equipment will not give maximum performance unless it is maintained by competent technicians.

Every company has a technical staff. It may consist of hundreds or perhaps thousands of men . . . or there may be only two or three. These men know and understand telephone technology as it used to be, but in all honesty, do they understand the fundamentals of electronic curcuitry?

If they aren't on speaking terms with oscillators . . . rectifiers . . . amplifiers . . . transistors . . . etc., they are not going to be able to give you the technical support you need. A man may be able to wire a central office switchboard in the dark, but if he isn't skilled in the mental tools of electronics, your new equipment will not give you the service you paid for.

In all probability your present staff is very capable. You wouldn't have one which didn't give you the reliability you must have. Therefore they are the logical men to take on the maintenance of electronic equipment . . . as soon as they have received a sound foundation of electronic fundamentals.

This can be done economically and without the loss of valuable man hours by a non-resident training program. Several schools offer this service. They teach your men the fundamentals of electronic circuits. Then, with the ability to understand the principles of any electronic device, your company and the equipment manufacturer have only to conduct a brief orientation of the specialized equipment.

This plan has been used successfully by many companies. It has helped them . . . and it can help you. It will pay you to investigate and get the facts.

For full information on schools providing training in electronic theory and FCC license preparation, write to the National Home Study Council, 1420 New York Avenue, N. W. Washington 5, D. C.

If you would like the details on our Employers Plan for training technical personnel, write to

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To meet the needs of different customers, you must provide many types of phones—standard *and* special. Why? Because it's profitable! The customer who wants a special phone pays extra for the extra service.

Any new customers in your area? Any old ones with new telephone needs? If so, show them the AE phone best suited to their particular needs. Contact your AE representative. He'll be glad to give you full details on our complete line of telephone services and related instruments. Only AE offers 15 different phones to meet different customer needs.

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Eliminating Costly Repairs and Lost Time by

VEHICLE RUSTPROOFING

By RAY BLAIN

The rust-proofing method developed and being used by the Michigan Bell Telephone Co. goes into the "insides" of vehicles where moisture doesn't readily evaporate.

A NEW METHOD of rustproofing for automobiles and trucks has been developed by the Michigan Bell Telephone Co. Extensive field tests over the past two years have indicated that the new method is effective in both preventing and arresting the spread of rust on vehicles, according to Gilbert H. Selke, superintendent of motor vehicle equipment.

In the use of this new method, an average of 18 holes are drilled into a typical two-door passenger sedan and a specially-adapted grease compound is injected under extremely high pressure. This action forces the grease compound inside the car and into boxed-in sections where moisture does not readily evaporate. Other areas, also treated, are the rocker panels, the insides of the doors, the corner posts, the wheel housings, areas around the headlights, and pockets under fenders that can hold mud for any period of time. Holes drilled into the body are located either in inconspicuous locations or in areas where they are obscured from sight. The holes are then plugged with plastic caps which resemble a factory installation.

The compound used in the process has a capillary action that permits it to work its way into minute crevices which otherwise could become the starting point for rust. This compound is a grease employed by other industries to prevent rust in underground piping. By thinning this grease with a solvent, Michigan Bell has been able to adapt it for its own use in the rustproofing of its vehicles.

A special industrial spray gun, which pumps the compound under a pressure of 1,200 pounds per square inch, is the basic tool used in the process. The spray gun has a nozzle approximately 3 feet in length which is inserted into the "insides" of cars and trucks undergoing treatment. The high pressure under which the spray is applied prevents the introduction of air into the compound. This action prevents any possibility of dry spots in areas being treated. Should dry spots occur, the effectiveness of the treatment is considerably reduced. Michigan Bell insists that the treatment be applied only by well-trained technicians for otherwise they would not obtain full benefit of the protection that this process provides.

Michigan Bell attributes their vehicle rust problem entirely to corrosives used on streets—salt to fight snow during the winter, and calcium

Kenneth Hawes (left), supervising motor equipment foreman of the Michigan Bell Telephone Co., watches mechanic injecting specially-adapted grease compound into "insides" of a vehicle undergoing the company's rust-proofing process.

An average of 18 holes are drilled into a typical two-door sedan for application of the rust-proofing treatment. The holes are plugged with plastic caps which resemble a factory installation.

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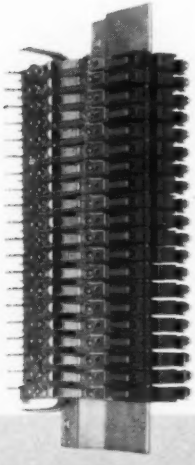
Do you know that more and more Cook (MDF) Main Distributing Frames are being installed in central offices throughout the world today because their *design simplicity* means *economy* where time, space and cost are important? Standardized unit construction permits greater flexibility in field assembly. These frames meet every requirement for termination of outside cable in central offices and for cross-connecting of lines, and . . .



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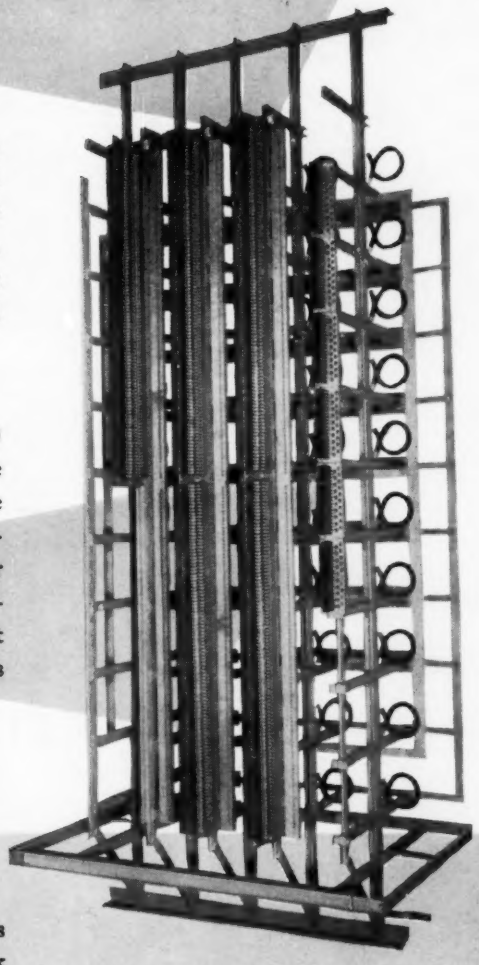
Do you know that Cook Type 3800 Central Office Protectors give the ultimate in dependable performance when installed on Cook Main Distributing Frames? They are used for cable termination and provide protection for central office equipment and personnel from high potentials and sneak currents.



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chloride to settle dust during the summer. The blame has been placed on these chemicals through the process of elimination. It is known that the telephone company in Boston, where salt is not used, has 1952 and 1953 model vehicles in use that have suffered virtually no rust damage. Yet, farther north in New England, where salt is used on the streets in winter, they have suffered the same rust damage as in Michigan. The same is true in other parts of the country; where corrosives are used on the streets, rust is always a serious problem. Where corrosives are not used, the problem is never serious.

With its 4,600 vehicles Michigan Bell operates the largest fleet in the state. It operates passenger cars from 5½ to 6 years and trucks from 6½ to 7 years. This period of time gives rust a good chance to get started and do damage to vehicles. It is estimated that the new process will save Michigan Bell approximately $40,000 annually. This is based on the fact that it has been spending about $80,000 annually to repair rust damage and will now spend about $40,000 annually in rustproofing the fleet. The difference leaves an estimated saving of approximately $40,000 annually. Savings may be even greater because, while the repairing of rust damage is costly, valuable time was also lost in the use of vehicles when they were in the garage for rust repairs.

A "crash" program has recently been ordered by Michigan Bell to treat its entire fleet with the new rustproofing process. Contractors have been trained in the use of the exact method of treating cars and trucks and the work is being turned over to them. The cost of rustproofing each vehicle is averaging approximately the cost of a first-class undercoating job.

Obituary

THEODORE BERRIER, 69, retired assistant vice president of the Washington office of the American Telephone & Telegraph Co., died Nov. 2 in Washington, D. C.

A graduate of the University of Pennsylvania, Mr. Berrier was born in Harrisburg, Pa.

Before joining Bell Telephone Co. of Pennsylvania in 1914, he was employed by the Pennsylvania Steel Co.

He held a number of positions in the commercial departments of Bell of Pa. and Diamond State Telephone Co. of Delaware before becoming affiliated with AT&T in New York City in 1925.

In 1938 he was assigned to Washington. He attained the post of assistant vice president of the Washington office in 1942 and spent much of his efforts in the improvement of government communications.

He was a member of the American Institute of Electrical Engineers, Armed Forces Communications & Electronics Association and the Telephone Pioneers of America.

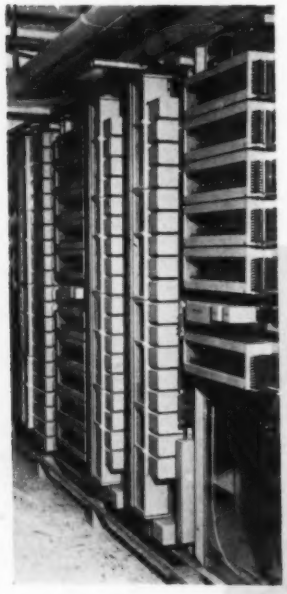
Survivors include his daughter, Virginia Anne of Washington, and a son, John Theodore of Baltimore.

Incorporate in Arizona

A new telephone company, Harquahala Valley Telephone Co., Buckeye, Ariz., was incorporated, it was reported on Nov. 7. Incorporators are listed as Joseph F. Martori of Glendale, Ariz.; W. H. Shawver, also of Glendale; Stanley C. McDonald of Phoenix; Ray Smith of Harquahala Star Route, Buckeye; and six others.

Sterling Guides

"Formula for success: triumph = try + oomph. . . . Obstacles are those awful things you see if you take your eyes off the goal."—from the John Deere *Furrow*.



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Courts and Commissions

OK Rates for N. Y. Company Joining in Capital Metroplan

The New York Public Service Commission has accepted a tariff amendment filed by State Telephone Co. Coxsackie, designed to establish new monthly rates for subscribers at its Ravena exchange. These rates will be the same as those charged by New York Telephone Co. for metropolitan area service in its capital (Albany) district. The new rates of both companies will become effective Dec. 3 when the capital district Metroplan is introduced (TELEPHONY, Nov. 4).

The Ravena exchange of State Telephone Co., serving about 2,400 subscribers, will be included in the Metroplan. Its Coxsackie exchange, which serves about 2,600 subscribers, will not be included in it, however,

The company estimates that the new uniform Metroplan rates applicable to its Ravena subscribers will produce about $52,000 additional annual revenue. This will be offset by an estimated $25,000 loss in toll revenues. The company reported it has expended more than $64,500 to install facilities necessary to provide Metroplan service to its Ravena exchange, and that its decision to extend such service to that area was made only after a survey of subscribers indicated a desire for it even under the higher rates.

Orders MST&T Property Valuation Certified in N. M.

The New Mexico Supreme Court has vacated a Santa Fe District Court order enjoining the New Mexico Tax Commission from certifying valuations on Mountain States Telephone & Telegraph Co. property to county assessors (TELEPHONY, Oct. 28).

This step reportedly will clear the way for putting $47,412,067 in 1961 valuations for Mountain States on 31 county rolls for ad valorem tax purposes.

The high court also directed Santa Fe District Court to take necessary steps to permit Mountain States to pay whatever portion of its 1961 property taxes it chooses under protest pending final determination of the case.

Judge Louis Armijo in Santa Fe District Court had issued injunctions barring the tax commission from certifying the Mountain States company and the American Telephone & Telegraph Co.'s valuations to county assessors.

The Supreme Court also ordered the lower court to make affected county

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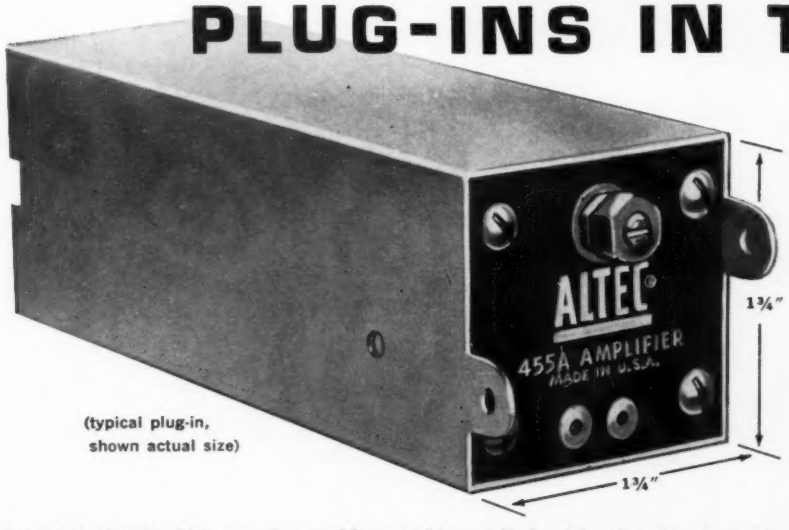

(typical plug-in, shown actual size)

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450B	AMPLIFIER, REPEATER
453B	AMPLIFIER, REPEATER
455B	AMPLIFIER, REPEATER
457B	AMPLIFIER, REPEATER
460A	AMPLIFIER, COMPRESSOR
461A	AMPLIFIER, POWER
12912	EQUALIZER
13530A	COMPROMISE NETWORK
13531	NETWORK H88
13532	NETWORK NON-LOADED
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treasurers parties in the appeal of Mountain States valuations.

The court's unanimous opinion was that the taxing process cannot be interrupted.

"The ad valorem tax structure," it said, "is such that unless the various steps are taken by certain fixed dates, the entire taxing process is in danger. Even this proceeding will, in part, interfere with the statutory time schedule of the various taxing officials, and a stay, such as claimed by Mountain States, would very possibly prevent the placing of any valuation of Mountain States property for a period of months and perhaps years.

"In any event, we do not believe that the statute evidences a clear mandate, such as would authorize the court to interfere with the certification by petition, by stay or injunction."

The Mountain States company had contended that the 45.22 per cent assessment rate applied to its property in New Mexico by the tax commission is discriminatory. It also states that there are inequalities between assessments for different types of corporate taxpayers and also in county assessment rates.

Commission spokesmen said the commission would certify Mountain States' valuations to county assessors. This step would enable the assessors to place Mountain States valuations on tax rolls. The company, the commission said, could protest any portion of the valuation it chose. This could be the entire valuation or a segment. If a part is protested, the 1961 tax could be paid on the portion not contested.

Indiana PSC Approves Merger Of United, Bremen Cos.

Merger of Bremen Telephone Corp. into United Telephone Co. of Indiana, Inc. has been approved by the Indiana Public Service Commission, it was reported on Nov. 9 (TELEPHONY, July 29). The consolidation will be effective Jan. 1.

The Bremen corporation serves 1,800 subscribers through the Bremen dial exchange.

The United company, headquartered in Warsaw, provides service to 83,500 telephones in 78 exchanges. The entire company will be dial operated when Columbia City, the last manual exchange, is converted to dial operation in November.

Approve EAS in Wisconsin

Wisconsin (Bell) Telephone Co. on Nov. 9 was granted permission by the Wisconsin Public Service Commission to provide extended area service from its Manitowoc exchange to the Two

Rivers exchange of General Telephone Co. of Wisconsin. Rates at Manitowoc will increase by about $31,300 annually.

La. High Court Reaffirms Refunds Due Independents

The Louisiana Supreme Court on Nov. 6 reinstated its order holding that Southern Bell Telephone & Telegraph Co. must include Louisiana Independent telephone companies in making refunds in connection with intrastate toll rates (TELEPHONY, July 8, 1961).

The court on May 29, 1961, had ruled that Southern Bell must make additional refunds as called for in a 1960 Louisiana Public Service Commission order.

The case had been appealed to the supreme court by the commission following a permanent injunction issued by the East Baton Rouge District Court against the order.

Southern Bell had asked for a rehearing of the supreme court's May 1961 ruling.

The commission in 1956 had ordered Southern Bell to make 20 per cent refunds to its customers on all intrastate long distance calls.

In 1960, a commission order required that Southern Bell refund 20 per cent of all intrastate toll rates and charges collected by Independent companies for use of Southern Bell facilities used in delivering messages originating in Independent companies' exchanges for the period from Sept. 1, 1956 to June 14, 1959 and to refund 10 per cent of such rates and charges for the period from June 14, 1959 to May 5, 1960, during which periods reduced intrastate toll rates were in effect.

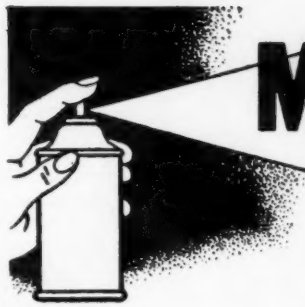
The Supreme Court has upheld both the 1956 and 1960 commission rulings.

Dismiss N.Y. Wiretap Cases Due to Federal Law Conflict

Complaints against 98 alleged bookies and policy racketeers were dismissed in a Brooklyn, N. Y. court on Nov. 14 after a judge refused to permit the introduction of wiretap evidence, the New York *Herald Tribune* has reported.

The complaints were dismissed at the same time a New York County district attorney had asked for the dismissal of seven narcotics cases in New York General Sessions Court on the ground that the wiretap testimony "which could prove the guilt of the defendants beyond all doubt" is inadmissible under a federal court ruling.

Kings County district attorney Edward S. Silver, whose office acted as prosecutor in the Brooklyn case, commenting on the dismissal said: "It's



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like hunting lions with bean shooters. We're stymied until changes are made in the federal law permitting us to use wiretaps. While state laws permit us to use authorized taps, we are likely to be prosecuted, if we use them, by the federal authorities."

The New York County district attorney's office said there were about two dozen cases still on the books involving the use of wiretap evidence, but that he would refuse to prosecute until Congress acted to make such evidence admissible in a court of law without fear of federal reprisals.

Authorize N. Y. Sale, Loan To Modernize System

The New York Public Service Commission on Nov. 16 authorized The Dundee Telephone & Telegraph Co. to sell its plant and system to Western Counties Telephone Corp. At the same time, it approved a proposal by Western Counties Telephone to borrow $1,105,000 from the Rural Electrification Administration with which to finance the purchase and the ultimate modernization of the Dundee company's plant.

The Dundee company serves about 1,600 main stations through a manual exchange at its headquarters in Dundee, and through unattended dial exchanges at Himrod, Tyrone and Wayne, N. Y. Most of its stock was acquired in 1959 by the officers of Western Counties Telephone, according to the commission.

That company, with headquarters in New York City, provides telephone service to about 3,000 stations in New York State through a dial exchange at Marathon and through manual exchanges at Darien, Corfu, Spencer and Van Etten.

Western Counties is now converting its four manual exchanges into two dial exchanges to be located at Darien and Spencer. Upon acquisition of the Dundee property, it proposes to convert the Dundee exchange to dial service within 18 months, and to reinforce the Wayne office, thereafter discontinuing the exchanges at Himrod and Tyrone.

Ask Financing for Cut-Over, Rate Increase in Nebraska

The Nebraska Railway Commission on Nov. 11 set a hearing date of Nov. 28 on the application of the Danbury-Lebanon Telephone Exchange, Danbury, to issue notes preparatory to dial conversion, and to increase rates.

Danbury-Lebanon and Haigler Telephone Exchanges asked authority to sell to the Hartman Telephone Exchange, Inc. recently (TELEPHONY, Oct. 7).

Sale to Western Carolina Effected by Stock Transfer

The Western Carolina Telephone Co., Weaverville, N. C., has purchased the Old Fort Telephone Co. The sale effective Nov. 13, was announced jointly by Thomas H. Sawyer of Weaverville, president of Western Carolina, and Ashby Robinson of Old Fort, president of the Old Fort company.

The purchase was effected by issuing Western Carolina stock to stockholders in Old Fort.

The Old Fort exchange, presently serving 540 subscribers in Old Fort and the western end of McDowell County, will be managed by Clarence Speer, Western Carolina manager at Marion. Western Carolina already operated telephone facilities serving all of McDowell County except the Old Fort area.

The purchaser plans to build a modern building at Old Fort to house dial equipment; and expects to convert the exchange to dial operation by the fall of 1962.

Mr. Robinson bought Old Fort in 1938 from Southern Appalachian Telephone Co., and since 1958, the company had operated as a company of stockholders with Robinson as president.

Western Carolina serves more than 17,000 subscribers in western North Carolina and Georgia. Old Fort becomes the 20th exchange. Others are at Bakersville, Burnsville, Bryson City, Cashiers, Cherokee, Cullowhee, Fontana, Franklin, Hayesville, Hot Springs, Highlands, Marion, Marshall, Mars Hill, Murphy, Sylva, Robbinsville, and Weaverville, N. C.; and Clayton, Ga.

Permit New Rates in N. Y., Pending Investigation

The New York Public Service Commission announced on Nov. 16 that it has instituted an investigation into the rates and practices of Ogden Telephone Co., Spencerport.

The commission, however, accepted, for the present, the company's new tariff, which increases its rates to the level of those charged by Rochester, (N. Y.) Telephone Corp. These will become effective on Dec. 3, and will permit Ogden Telephone to institute toll-free service to Rochester on that date, as planned.

Ogden Telephone serves about 5,900 stations through interconnected dial exchanges at Spencerport, Hilton and North Chili. The company proposed to provide its subscribers with metropolitan area service after a survey indicated that a majority desired it.

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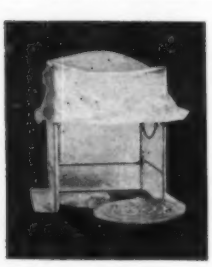

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The new rates will be among things under study in the commission's investigation. The company estimates that the additional annual revenue to be derived from the increase in its basic rates will approximate $130,500. More than offsetting this, however, will be a reduction of about $150,090 annually in toll revenues, resulting from the establishment of metropolitan service. In addition, the company said the cost of installing equipment necessary to provide such service has exceeded $313,000.

Subsequent to the company's announcement of its plan to offer the new service beginning Dec. 3, a complaint was filed with the commission by 58 area residents objecting to the new rate schedule and protesting certain of the company's operating practices.

Pearces Purchase Alden, Ia. Company

C. C. Pearce of Riceville, Ia. has announced that he and his son, Donald, have purchased the Alden (Ia.) Telephone Co.

The Alden company has 600 stations, and Mr. Pearce said plans are being made to convert the Alden exchange to dial operation.

The Pearces also own the Farmers Telephone Co. of Riceville, Ia.; Wright & Franklin County Telephone Co. of Dows, Ia.; Plymouth (Ia.) Telephone Co., and Lime Springs (Ia.) Telephone Co.

Williamson Carolina T&T's Commercial Supervisor

T. P. Williamson has been named general commercial supervisor of the Carolina Telephone & Telegraph Co., Tarboro, N. C., succeeding E. P. Kittinger, who has been appointed general plant manager.

Mr. Williamson has been succeeded as district manager at Rocky Mount, N. C., by W. T. Jones, who has been serving as district plant manager at New Bern, N. C.

Williamson has been with the company since 1950, working as development supervisor in the general office of the commercial department in Tarboro, as supervisor of auxiliary service and contracts in Tarboro, as manager in Fayetteville, as district commercial supervisor at Fayetteville, and as district commercial manager at Rocky Mount.

Mr. Jones joined the company in 1946 as equipment installer at Tarboro. He has served as central office repairman at Henderson, as manager at Warrenton, manager at Rocky Mount, district maintenance supervisor at New Bern, and as district plant manager at New Bern.

The Outdoor Telephone Canopy (GP-2500, List 1) is a revenue builder in the daytime or at night. And it's constructed to last for years.

The large, easy-to-read lettering is silk screened in red or blue on the white canopy. The lettering stays bright and colorful for years. Unless specified differently, red will be shipped.

At night the unit and surrounding area are lighted by 32 watts of fluorescent lighting. If in an area where bugs are easily attracted, the canopy can be treated to provide a yellow light invisible to most bugs.

The large canopy protects the caller from the sun, yet there is complete air circulation. The clear plastic sides provide adequate protection in slightly bad weather. Also, these clear plastic sides discourage tampering with the telephone.

The Outdoor Telephone Canopy can be pole, wall, or pedestal mounted. When pedestal mounted, the total height of the unit above ground is 88″. The dimensions of the unit are 56¼″ high, 30¼″ wide, and 39″ deep. *The GP-2500, List 1 is shipped complete with pedestal, ready to install.*

Gladwin manufactures many products for the telephone industry. Included are Shelf-Ettes®, Boothettes®, a variety of lighted and non lighted signs, and display stands. Write for a free catalog today.

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Area Code 404

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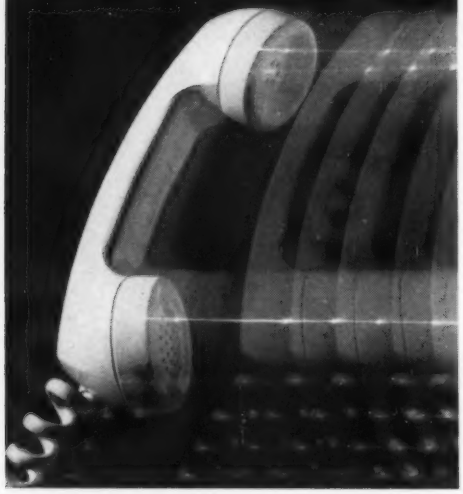
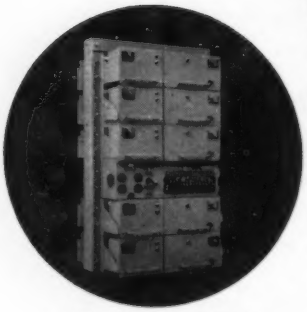


WITH 1 TO 5 MORE SUBSCRIBER CHANNELS ON YOUR MULTI-PARTY PAIR

SUBSCRIBER CARRIER



Central office and pole-mounted installation are simple with the Lynch B 120

The Lynch B 120 Subscriber Carrier Telephone System offers these advantages:

Matches W. E. frequency allocations ■ Single Sideband, suppressed carrier for 15 to 23 db superiority in signal-to-noise ratio ■ Can duplicate any system of subscriber signaling ■ The vacuum tube circuitry of existing pole mounted terminal installations, is permitting operation under ambient temperatures of from −50° F to 120° F. ■ Easy to install, rugged, of proven high quality ■ Available with a complete line of standard-mounting, off-the-shelf line treatment equipment ■ Easy, economical means of expanding subscriber service.

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Contact your Graybar Representative or call us direct for complete information

THE NOTEBOOK

Concluded from page 17

were publicized for the change to all-white also applies to the new two-tone white and gold with the following added advantages:

(1) Improved safety in certain areas of the country, particularly under snow conditions.

(2) A more effective display of the system logo is possible.

(3) The two-tone is more distinctive from the corporate image point of view since all-white is more widely used by non-related industries such as milk companies and laundry services.

COMMUNICATIONS

Continued from page 20

orbiting teammate and will be able to reset the switch for the retro-rocket, for capsule re-entry.

Figures released last year pointed out that the number of personnel involved in Vandenberg and Point Arguello facilities includes: 6,000 Air Force personnel, 600 Navy tenants, 100 Army Corps of Engineers, 4,000 contractor technicians, and 2,000 construction technicians, a total of 13,000 people directly stationed at the base. Dependents push this total to 34,000. There are also 13 major contractors working on construction projects on base, and 40 sub-contractors associated with construction operations.

Economic Survey

Estimated annual outlay for maintaining VAFB is 50 million dollars. Additional income to Santa Barbara County, Calif., has indirectly tripled the tax base in the city of Lompoc, doubled it in Santa Maria, and has greatly benefited the Santa Barbara-Goleta area.

Since Point Arguello was commissioned three short years ago, more than 45 million dollars has been spent for construction of launch complexes missile assembly and ordnance buildings, technical support shops and numerous tracking facilities. Current capital investment is estimated at approximately 95 million dollars, with an estimated increase over the next five years, of 85 million dollars.

Telephone System

General of California's role at this facility is the provision of the administrative telephone system, which includes the main switchboards and all stations connected to the boards. The company also provides outside plant facilities associated with this system

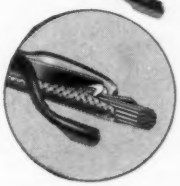
Slit and Cut Cable Sheath Fast and Easy!

Neuses Cable Tools

CABLE SHEATH SLITTER

No. N-62267

Just the tool needed for slitting most of the outdoor, heavy-duty types of cable coverings — large or small diameters.
Cuts into cable jacket at any point without previous notching. Size 6"x 1½". Price with 2 blades $4.20.



RING CUTTING CABLE TOOL

No. N-2060

A real handy tool for "ring" cutting the sheathing of INSIDE TYPE plastic, fabric, or rubber covered cable 3/16" to ½", or thin sheathed cable up to 1" diameter. Cut through cable sheathing *limited* to 1/32". Price $7.40.

Write for catalog.

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Small Tools for the Communication Industry.

511-19 N. DWYER ST. ARLINGTON HEIGHTS, ILL.

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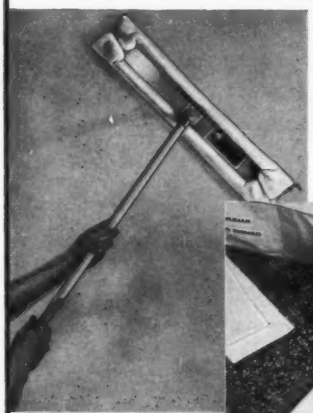
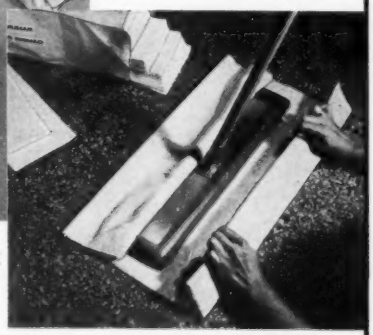
FLOORS · · · WALLS
and hand-dust too with



Masslinn® CLEANING CLOTHS* and SWEEPING TOOL



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For Systems Planning

Federal Electric Corporation, worldwide service division of International Telephone and Telegraph Corporation, has been awarded the responsibility for implementation of Med-Tropo—a major tropospheric scatter communication system in the Mediterranean.

We are now offering positions to senior Communications Engineers who have a broad background in long lines and microwave communications and who are thoroughly knowledgeable of standard U. S. or European planning and operating specifications for large-scale telecommunication systems. A degree, a minimum of ten years' experience and proven ability to plan a communication system which must work in all environments under all conditions, and with input devices ranging from the telephone to the digital computer are our general requirements. We seek particular experience in Multiplex, Switching, Troposcatter, Microwave and Power Systems.

To obtain further information or to arrange an interview, send your resume to Mr. Robert Hauserman, Professional Staffing, Dept. TE.

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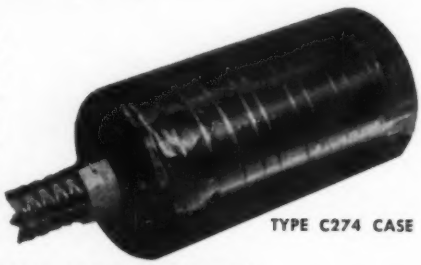
GALVANIZED STEEL CASE ASSEMBLIES

FOR DIRECT EARTH BURIAL INSTALLATION.
CONTAINING FOUR TO FOUR HUNDRED SIXTY UNITS.

These assemblies can be equipped with loading coils, capacitors, inductors and MF units.

NOTE:
These assemblies are completely covered with plastic tape to protect all metal from electrolysis and other soil corrosive agents.



TYPE C274 CASE

- **LEAD STUB ASSEMBLIES ARE PRESSURIZED.**
- **PLASTIC STUB ASSEMBLIES ARE SEALED IN THERMOPLASTIC COMPOUND TO INSURE PROTECTION FROM MOISTURE.**

Write us for assistance on your loading problems.
Ceeco assemblies are sold by your telephone equipment supplier.

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80 King St. West

on a construction-maintenance contract.

Many private-line services are terminated at Point Arguello. Some of these furnish connecting links with the main headquarters of the Pacific Missile Range (PMR), and others provide terminating equipment for the NASA Mercury Project.

What effect has the mighty missile complex had on surrounding areas?

Impact on Economy

An economic survey conducted by the Air Force in December, 1959, revealed that $4,500,000 was being spent monthly on the local economy. The flow of cash was directly attributable to Vandenberg Air Force Base and the Naval Missile Facility.

Valuation of building permits issued in Santa Maria during 1959 was 20 million dollars—more than twice as much as in 1958, and more than 4½ times as much as in 1957. Building permits issued during 1958-59 had a valuation of more than the previous 12 years combined.

Interwoven with this dynamic economic and population boom are General's communications facilities which bind together both civilian and military life at one of our country's most vital bases.

General Telephone's assistant vice president Lee Williamson, and Defense communications field representative Robert A. Farley coordinate military communications needs.

VIRGINIA CONVENTION

Continued from page 22

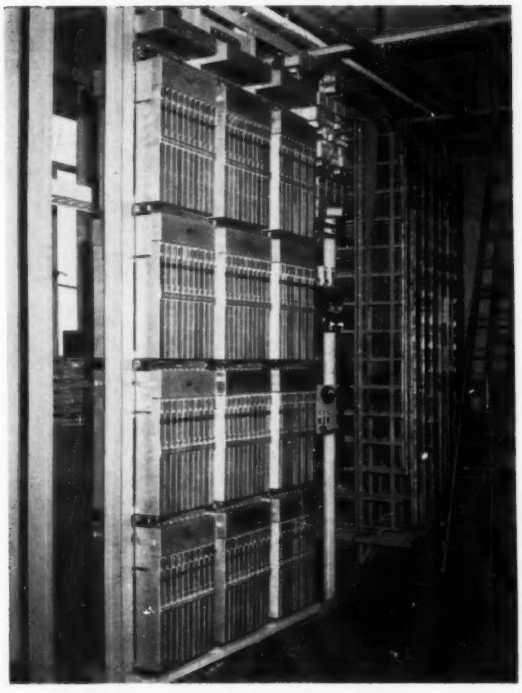
the future, Mr. Hite mentioned the Maser amplifier and the wave guides that may eventually connect large metropolitan centers, utilizing a frequency of 50,000 mc and providing 100,000 circuits. Experiments now in progress indicate that these wave guides will be able to negotiate bends and even turn corners. He also reported that the video telephone is now technically feasible, but that its use at this time would not prove profitable.

The push button telephone is now undergoing field trials at two Bell company locations. It was estimated that 3 per cent of the subscribers in the trial areas would be willing to pay an extra charge for the pushbutton service. Actually, 4.9 per cent in one area, and 3.7 per cent in the other, have taken advantage of the new premium service.

"DDD and its Problems" was another interesting address, and was presented by A. K. Davis, general plant supervisor of the Chesapeake & Potomac

PANHANDLE

TRANSISTORIZED
"X" CARRIER SYSTEM



Check the signaling features, for only Panhandle type "X" transistorized angular modulated cable carrier offers a simple and economical approach to them all.

1. **Ringdown.**
2. **E/M two wire or four wire.**
3. **Loop dial reverse battery (Direct selector level—selector for terminal or tandem office operation).**
4. **Simplex—two way (T/R and dial leg) operator office trunks (CLR and toll switch).**
5. **Foreign exchange service and PBX trunks.**
6. **PABX trunks with premonitory busy.**
7. **Operational special feature marking.**
   - **A. Automatic toll ticketing identification marking.**
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   - **C. Pay-station collect and refund.**

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INTERNATIONAL TELETRONICS, INC.
644 BRANIFF BLDG.
DALLAS 35, TEXAS TEL. # FL7-8353

For information and engineering assistance with your trunk signaling applications call or write to the above.

TECHNICAL SUMMARY

Voice frequency input level	4-wire operation — −16 dbm 2-wire operation — 0 dbm
Voice frequency output level	4-wire operation — +7 dbm 2-wire operation — −2 dbm or −4 dbm (with resistance hybrid and compromise network)
Normal HF channel transmitting level	−20 dbm
Maximum repeater gain at 336KC	20 db
Mean average noise for a 20 channel system contributed by terminals and repeaters using FIA weighting at 2-wire drop with filtered 48 VDC battery.	20 dba
Drop level stability (1) Properly engineered systems (2) Battery supply does not have variations exceeding ±5%	±.2 db
High frequency input-output impedance	135 ohms
Power requirements 20 channel terminals complete with 12 repeaters, one-way	4.15 amp. (maximum connectable load)
Channel audio response	300 to 3000 CPS to 3db points nominal
Channel Modulation Index	5 radians at 1000 cps 0 dbm — 2-wire drop −16 dbm — 4-wire drop
Mounting Dimensions Master oscillator or distribution amplifier (normally one per bay front mounted only) "A" Group — 10 channels "B" Group — 10 channels "A" & "B" Groups — 20 channels	4 rack spaces — 7 inches 17 rack spaces — 29¾ inches 16 rack spaces — 28 inches 33 rack spaces — 57¾ inches

Telephone Co., Richmond. DDD was defined by Mr. Davis as long distance calls that are completed by an operator or subscriber without assistance from an intermediate operator.

He stated that our present-day service is not as good as our customers expect. One reason is that industry is spreading out into small communities. Many of these companies find that the telephone service is not as good in the small communities as it was in the metropolitan areas they have vacated.

Several items were mentioned as possible causes of poor service. One is the attempt to use equipment engineered and installed 15 or 20 years ago. This was likened by Mr. Davis to a 1920 Ford attempting to compete with a 1962 Cadillac. Also, old obsolete equipment often is connected into new and modern equipment.

Our present signal system was designed for operators' use and our customers are not qualified as operators. Tones and intercept announcements are not standardized. CDO's, in many cases, can be compared to stepchildren. Actually, he said, a CDO should provide service as good as that furnished in metropolitan areas.

Carrier channels tend to drift, which must be corrected by equipment modifications. Joint local and toll cables often provide inferior toll facilities. Dial speed tests on subscribers' instruments are seldom made these days.

Many open wire circuits are still in service which are more susceptible to noise than cable or carrier. Very few companies make noise measurements any more.

Finally, he stated, we should hang our heads in shame for the maintenance job we have done.

Recommended corrective action is to engineer and install the best equipment possible. This equipment must then be properly maintained or the service is certain to suffer. Toll circuits must all be properly balanced. Full advantage should be taken of 1000 cycle testing in all exchanges. An attempt should be made to hold all failed toll calls to determine the trouble. Sort and evaluate failure reports to determine a pattern. Make full use of a call-test-through program. Mr. Davis stated that he hopes that a test number and terminal can soon be provided in all offices in Virginia.

We must also keep in mind, he stated, that if switching equipment is not satisfactory for DDD, it will not provide satisfactory local service. We must also take full advantage of all available training programs.

In closing, Mr. Davis stated that "if every person would do exactly what they are supposed to do and what they are paid to do, we would have no trouble."

"Traffic Highlights of 1961" was the title of a talk delivered by W. G. Shepherd, division traffic superintendent of the General Telephone Co. of the Southeast. He stressed the importance of the proper engineering of inter-exchange truck groups. This is extremely important for trunk groups that carry DDD service.

Traffic surveys of trunk groups should be taken in the busy season, he said, and during average busy hours to insure that adequate facilities are provided.

He mentioned that the present manual TWX service would be converted to subscriber dial operating during September 1962.

WATS, and other new and special services were explained. The need for exercising extreme care to reduce billing errors to a minimum was stressed. It may even prove necessary for CAMA operators to repeat the charge number back to the subscriber in order to make certain that it is accurate.

The design of a more uniform marksense toll ticket is considered necessary he said. An automatic timing device that will punch the time in toll tickets will be available in the near future.

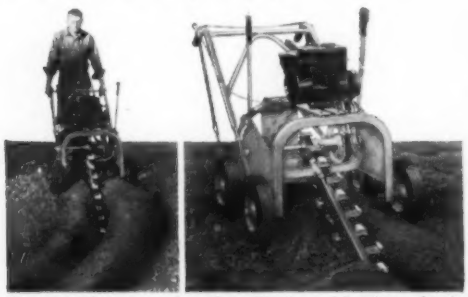
Mr. Shepherd also mentioned that the USITA Traffic Committee needs the help of the state associations. State associations are urged to cite traffic problems encountered and to indicate to USITA the ones that should be referred to Bell companies.

The chairman of the following committees made a report to the president during the meeting: Plant, Traffic, Commercial, Accounting, Treasurer, Advertising, Small Company, and Transmission and Communications Improvement.

Perhaps the high point of the convention was the presentation of the "Virginia Telephone Telerama and the Wonder-Working Power Thereof." This one-act skit depicted the importance of sales effort within the "Kingdom of Telephony." It was staged and directed by C. Dean Goodsell, chairman, department of dramatic art and speech of Hollins College, Hollins, Va.

W. N. Scholl of the General Telephone Co. of the Southeast, Bluefield, W. Va. played the part of King Telephone. Warren B. French Jr., of the Shenandoah Telephone Co., Edinburg, was coordinator of sales, and D. C.

TELEPHONE COMPANIES USE POW-R-SPADE to lay cable and conduit. Savings and extra profits on every job. Have your own machine. No waiting. No delays.



Digs straight, curves, or angles without special set-up. Comes completely assembled. One man operation from start to finish.

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"A labor saver, easy to operate, and profitable"

Fast trenching at lowest cost. Reduces man-hours to minutes. Eliminates disadvantages of subcontracting. A profitable, inexpensive machine to own and operate.

- Digs 3 in. wide by 1 to 24 in. deep; or 4 in. wide by 18 in. deep
- Light weight, compact, portable
- Since 1956 satisfied users all over U. S. A.
- Dependable trouble-free trenching at lowest cost.
- Digs 1½ to 17 ft. per minute, depending on soil conditions

FOR FREE BOOK ON POW-R-SPADE AND PRICES CALL COLLECT 788-9527

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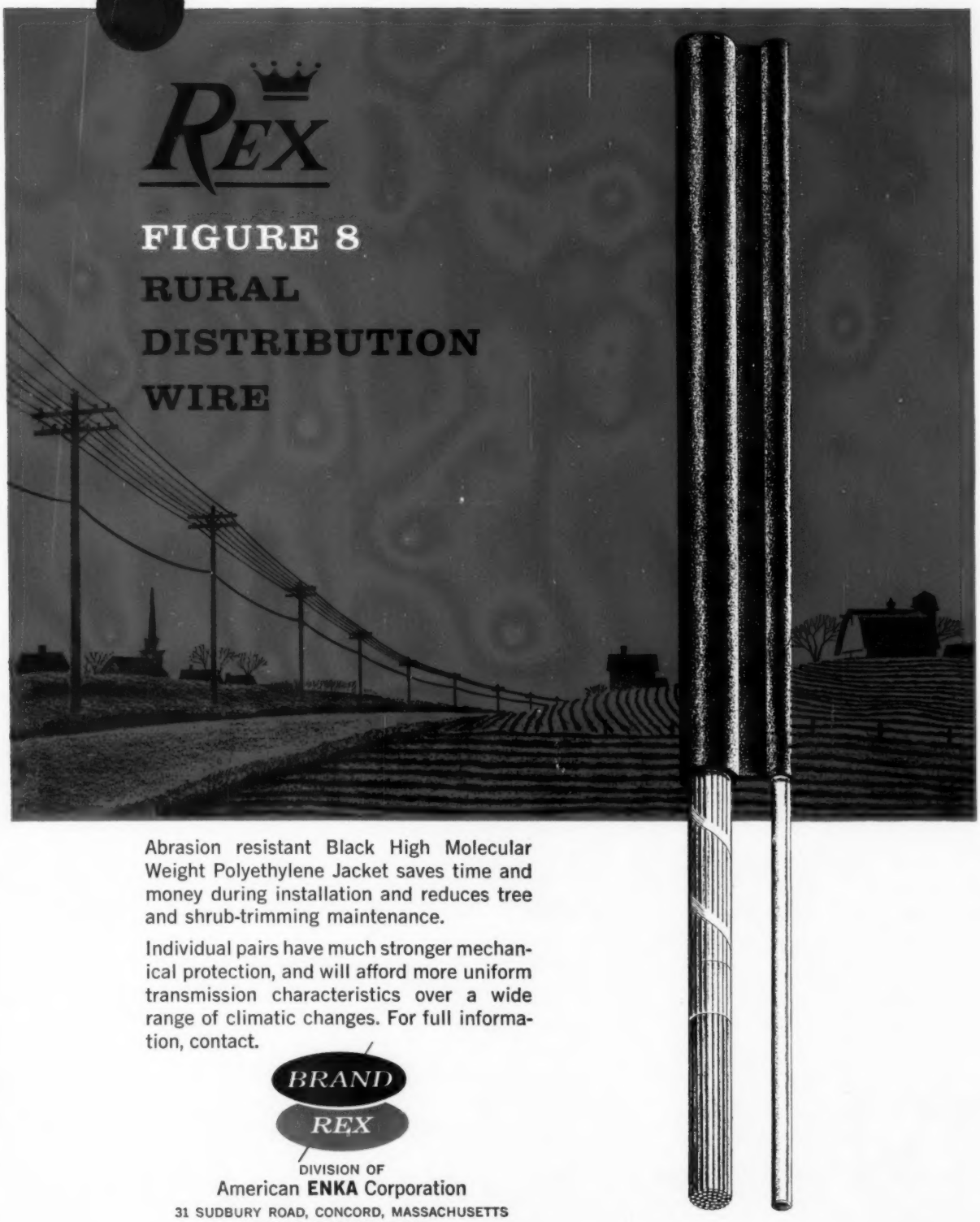

Abrasion resistant Black High Molecular Weight Polyethylene Jacket saves time and money during installation and reduces tree and shrub-trimming maintenance.

Individual pairs have much stronger mechanical protection, and will afford more uniform transmission characteristics over a wide range of climatic changes. For full information, contact.

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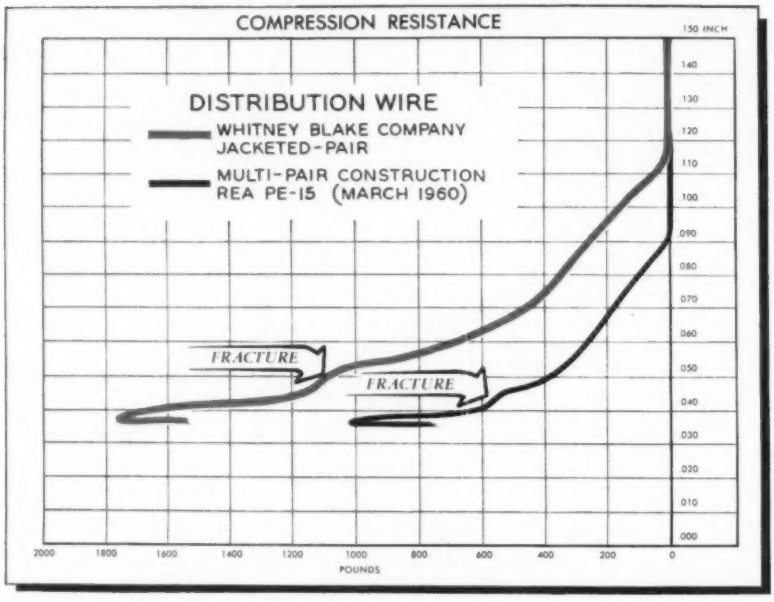
WHITNEY BLAKE

JACKETED PAIR

DISTRIBUTION WIRE

DOUBLE THE COMPRESSION RESISTANCE

of PE-15 Type



In order to demonstrate the extreme mechanical toughness of the JACKETED-PAIR wire, and to obtain a measure of the mechanical handling capabilities, samples of JACKETED-PAIR and the PE-15 construction were subjected to a compression-resistance test. The PE-15 type withstood an average of 525 pounds before the insulation was crushed to the failure point while the JACKETED-PAIR required an average crushing pressure of 1080 pounds. Thus, the JACKETED-PAIR has more than twice the compression resistance of the PE-15 type multi-pair distribution wire.

WB WHITNEY BLAKE CO.

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For more complete information ask for FREE copy of Bulletin T-6

Brackman, Clifton-Forge-Waynesboro Telephone Co., played the part of the page. The performances of these men were all outstanding.

Dramatic students from Hollins College played the following parts: Miss Living Room Telephone, Miss Bedroom Telephone, Miss Gameroom Telephone, Miss Telephone in the Bar, Miss Telephone in the Bath, Miss Teen Telephone, Miss Directory Advertising, and Miss Spirit of Sales.

Ribbons across the shoulders of these attractive girls indicated the telephone characters they represented. Each carried a color telephone set as she explained to King Telephone the important part she played in our present day lives. The speaking parts charmingly put over a sales argument.

Directors serving for the 1962-1964 terms are: L. E. Beydlev Jr., Harrisonburg; Warren B. French Jr., Edinburg; W. Tayloe Murphy, Warsaw; A. E. Reynolds, Bristol, Tenn.; A. G. Stogdale, Staunton; P. T. Campbell, Hanover; C. Lacey Compton, Manassas.

Charles P. Lamm, Charlottesville; W. N. Scholl, Bluefield, W. Va.; J. Kempter West, Smithfield; Virl L. Choate, Martinsville; E. B. Fitzgerald Jr., Gretna; E. C. Garnett Jr., Lexington; C. J. Logan, Tarboro, N. C.; Stanley A. Owens, Manassas.

Officers elected for the coming year are: President, Mr. Lamm; first vice president, Mr. Stogdale; second vice president, Mr. French; and secretary-treasurer, Mr. Scholl.

NBS Schedules '62 Course In Radio Propagation

The 1962 National Bureau of Standards course in Radio Propagation will be given July 16 through Aug. 3. The course, administered by the NBS Boulder, Colo., Laboratories, is open to scientific and engineering personnel in industry, other government agencies, or in universities.

There were 235 participants in the 1961 Radio Propagation course, representing almost every state and several foreign countries.

The course is being repeated in 1962 in response to requests from many individuals who were unable to attend this year.

Full particulars concerning the 1962 curriculum, and information concerning registration will be published soon by the Boulder Laboratories' Graduate School, which is directed by E. H. Brown, consultant in mathematical physics.

Can't Telephone; Home Burns

Shaw, Miss. firemen said on Nov. 12 that Otis Robinson suffered the total loss of his $75,000 plantation home

because he was unable to report a fire by telephone. Someone on his party line had apparently left a telephone off the hook.

Announce Dates for Telephone Engineering Conference

The sixth annual Telephone Engineering Conference is scheduled to be held on July 1 through 20, 1962, at Michigan State University, East Lansing. This conference is sponsored by the United States Independent Telephone Association through its Subcommittee on Engineering Education.

Since its inception, the Telephone Engineering Conference has had the continued support of the telephone industry and has contributed considerably in furthering the training of telephone engineers. To date, 246 representatives from 82 companies throughout this country and from Canada and South America have attended the conference.

As in the past, registration for the conference will be limited to 60. A brochure describing the 1962 course will be mailed to USITA member companies during the latter part of the year. The brochure may also be secured by contacting John U. Jeffries, coordinator, 105 Olds Hall, Michigan State University, East Lansing, Mich.

Lynch Names CIMCO First Service Depot

Lynch Communication Systems Inc. announces the appointment of CIMCO, Inc., 121 S. Pinckney St., Madison 1, Wis., as official communication installation and maintenance representatives.

The first company of its kind, it will

COMING FEATURE

Series of articles on "routine testing of both C. O. and outside plant facilities," by a Chief Engineer of a leading Independent company.

MUST READING FOR ALL PLANT AND ENGINEERING PERSONNEL

NOW CARRIER APPLICATION IS POSSIBLE

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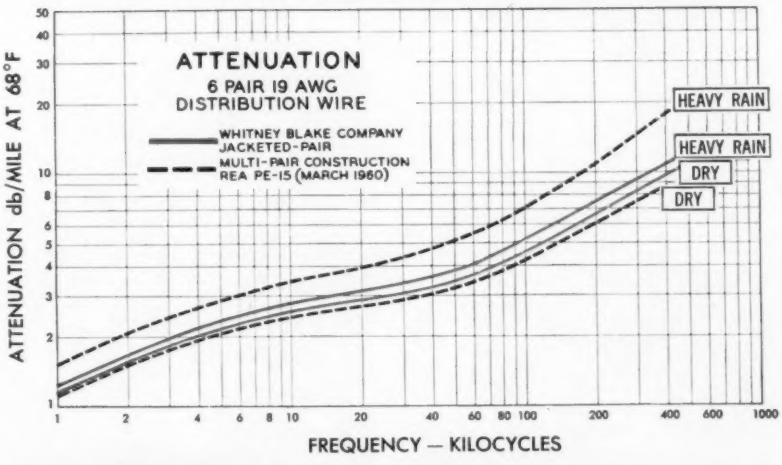
WHITNEY BLAKE JACKETED-PAIR DISTRIBUTION WIRE

JACKETED-PAIR now makes possible the use of carrier equipment as a result of the relatively small change and low level of attenuation. For example, at 400 kilocycles, the attenuation for PE-15 type increases106% from dry to heavy rain while JACKETED-PAIR increases only 12% at this frequency.



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Telephone CHestnut 8-5515 TWX: NH 84

Build lines to stay with

CHANCE ANCHORS

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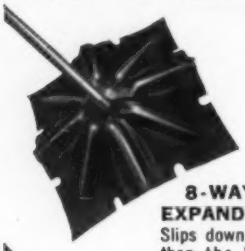

8-WAY EXPANDING ANCHOR
Slips down a hole no bigger than the base plate. 8 rib reinforced blades expand into solid earth all the way around.

NO-WRENCH SCREW ANCHOR
Pitch-controlled blade goes down fast and adds to holding power. Can be installed by hand.

POWER INSTALLED SCREW ANCHOR
Lets you mechanize screw anchor installation with your power hole-digging equipment. Anchors install in 6 to 8 man minutes.

NEVER-CREEP ANCHOR
Pulls entirely against solid, undisturbed earth. Holds more load than any other type of anchor.

CROSS-PLATE ANCHOR
Install in vertical machine bored holes. Costs much less than "dead-man"-- holds more.

ROCK & CONE ANCHORS
Wedge into solid rock and wedge against tamped rock.

CA61-8

A. B. CHANCE CO.
CENTRALIA, MISSOURI
A. B. Chance Company of Canada, Ltd., Toronto

serve as a Lynch service depot qualified to provide field installation, maintenance, testing and repairs on Lynch telephone carrier and microwave equipment throughout Wisconsin, Illinois, Indiana, Michigan, Iowa, Ohio, Minnesota, North and South Dakota. Other areas will also be covered as required. In most cases, CIMCO service will be contracted through Graybar Electric Co., Lynch's distributors.

CIMCO has a background of 12 years experience in the communications field and is said to be qualified for telephone, railroad, utility, pipeline and commercial industries service. Its personnel have attended a training course at the Lynch factory for thorough briefing on Lynch equipment.

Foreign Missionaries Report To Church by Telephone

Missionaries in Korea, Lebanon and Brazil on Nov. 5 made radio-telephone reports on their work to 600 worshippers in the Pine Street Presbyterian Church in Harrisburg, Pa.

The 25,000 mile telephone conference, heard by the congregation over four strategically-placed loudspeakers, was arranged and carried out by the Bell Telephone Co. of Pennsylvania.

Dr. J. Charles McKirachan, pastor of the church, said he regarded the worship service feature—first of its kind in central Pennsylvania—as a "promotional breakthrough" in the world mission challenge to Christians.

Basically, the clergyman had envisioned the telephone calls from Seoul, Korea; Sidon, Lebanon and Brasilia, Brazil as a means of "tying the Harrisburg congregation to the world-wide cause of Christ and dramatizing the degree of the congregation's involvement in this cause."

Dr. McKirachan admitted he had been somewhat apprehensive about the outcome of this telephonic conference. He knew that radio telephony is often at the mercy of the atmosphere.

He was prepared to discuss the work and backgrounds of the missionaries —if it was necessary to fill in time because of delays in completing the calls.

However, his fears were unfounded. The calls came through, loud and clear most of the time, from Korea, then Lebanon and then Brazil.

Speaking from Seoul was Mrs. Otto DeCamp, a veteran of 20 years of missionary endeavor in Korea. Douglas M. Hill, reporting from Sidon, cited details of his work in supervising the Gerard Institute in Lebanon.

There was special interest by the Pine Street congregation in the call from the Rev. Paul Coblentz in Brasilia.

The Harrisburg church and the Presbyterian Church in Brazil are linked through the efforts of a pioneer American missionary. In 1859, the Rev. Ashbel Green Simonton left the Pine Street Church to establish the Presbyterian Church in Brazil.

Bell Telephone Co. of Pennsylvania employes check equipment in advance of telephone calls from overseas missionaries to the Pine Street Presbyterian Church. The Rev. Dr. J. Charles McKirachan, right, talks with overseas operator. Bell employes, left to right, are Carroll R. Wiliams, Robert F. Kistler and Robert Nace.

"All of these people are close friends of ours," Dr. McKirachan explained. "We know them and are deeply involved in their work. The calls served to tie together across 25,000 miles the various Christian purposes and causes which center in our church.

"The program fulfilled our every expectation," he continued. "Our people were excited about the calls. They left the church with shining eyes, and they have talked about the experience many times since. It has been one of the dramatic highlights of our whole program."

Dr. McKirachan, who is synod chairman of the world-wide mission of the church, said he plans to emphasize this special program in the presentation of the church budget for mission work.

"This was a skilled kind of presentation that should change giving from the token kind of contribution to a dedicated commitment," Dr. McKirachan added.

Technical aspects of the calls were handled by the Bell Telephone Co., of Pennsylvania staff in Harrisburg. The telephone used by Dr. McKirachan in his conversations with the missionaries had a "confidencer" on the mouthpiece. This eliminated side noises and feedbacks when the conversations were amplified.

"With these telephone calls, I believe we have dramatized the world-circling unity, warmth and vitality of the church," Dr. McKirachan said.

Troche to Head Research And Development for Stahl

Herman J. Troche has joined Stahl Metal Products, Inc. and will be in charge of research and development.

H. J. TROCHE

He will be concerned with serving telephone, power and light companies with specialized truck bodies, mechanical and hydraulic equipment.

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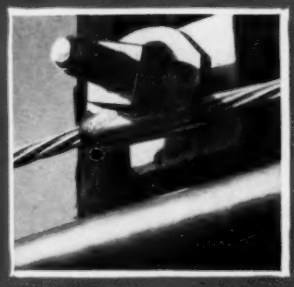

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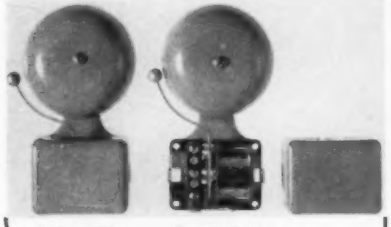

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ican Coach & Body Co. and more recently, vice president, engineering, Holan Corp., Mr. Troche brings to Stahl more than 32 years of engineering experience in the utility truck body and equipment field.

IN THE NATION'S CAPITAL

Continued from page 16

its rate base, would it not, definitely?

MR. GORDON. Yes.

MR. BARR. And, therefore, would earn that return.

So aren't we speaking in your language, Senator Long, that the taxpayer does it whether he does it through the rate route or the tax route?

SENATOR LONG. That is correct, even though sometimes you pay more in one way than you do in others.

Now, I am not opposed to the idea of private ownership of it. I might have some other suggestions to make eventually, but if you develop this thing to where you are sure you are going to succeed, I mean, if I am a person who is not a stockholder in one company or the other, I might find it more to my advantage to go ahead and pay for my share of this operation rather than to pay someone enough to make a 6 per cent return from that day on in the generations in the future, as long as that system is the most economical one to operate.

So it might wind up as far as the consumer is concerned that he might pay less if he went ahead and paid the cost of putting the thing up there than if he had the entire thing put into someone's rate base where he has to pay a fair return on the investment over a period of years.

I just have some doubt about which way it would operate the best. But it does seem to me if you are going to do it, that in view of the fact that so many people have contributed to this, and so many corporations, all of whom are Americans and who pay taxes, that if this thing can be a very good operation it would be well for everybody that they should be offered an opportunity to come in on the ground floor. That is about what you suggested in your statement here.

MR. BARR. Yes.

SENATOR LONG. You think this thing has some prospects of really amounting to something, and if you are going to take the approach that the government should not do it, that it ought to be turned over to private enterprise, it then raises a question of why not have, why not offer everybody a chance to come in.

I would want to own some stock in a corporation where it was agreed if any stockholder sold his share he would have to make it available to the other stockholders first. They would all have an opportunity to get in on it before they took someone else in on it.

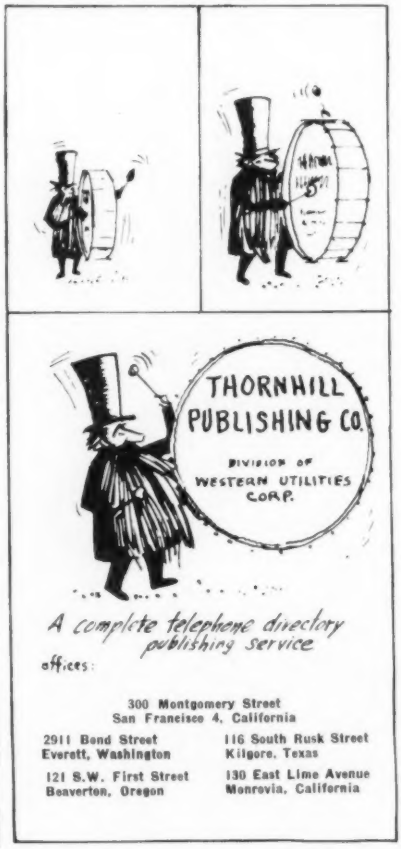
In a case like this where so many people have contributed so much to it, it does raise a question.

Speculate on Rayburn's Successor

The death of Speaker of the House Sam Rayburn has caused a great deal of speculation, along the banks of the Potomac, over who will succeed him.

Leading contender for the job seems to be Majority Leader John W. McCormack of Massachusetts who has been Rayburn's faithful lieutenant for 21 years and who served as acting speaker while Mr. Sam was absent from the final part of the last session.

But his election will be far from unanimous. Although there have been public protestations to the contrary, there is not an overly warm rapport between McCormack and another citizen of Massachusetts who resides at 1600 Pennsylvania Avenue. Intensive behind-the-scenes work by White House lobbyists could scuttle McCormack's chances for Speaker, but this



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writer doubts if the President will do this. McCormack also has his enemies in the lower chamber itself. Many of them were quick to criticize him while he was sitting in for Rayburn at the last session, charging that he lacked the leadership qualities needed in the Speaker's chair. These critics pointed to some of McCormack's failures with major administration bills, but there is much to be said in his defense.

First of all, McCormack was only given Rayburn's gavel while Rayburn was absent from the last session, not the power that went with it.

Rayburn was firmly entrenched in the Speaker's chair. There were few legislators who could remember any other Democratic Speaker. They owed their committee assignments to him. Many deeply respected him. Others feared him. He held stacks of IOU's from all over the House and he used them effectively when the going got rough. McCormack didn't have this club to use on unruly members—and the new Speaker, whoever he is, won't have it. The junior solons behaved at times like schoolboys harassing a substitute teacher.

McCormack was careful to avoid the impression that he was grasping for power. For instance, at the press briefings customarily held before each day's session he stood in the center of the room and did not sit in Mr. Rayburn's chair.

Actually, it would be quite an affront not to elect McCormack Speaker after having elected him temporary Speaker. It would also indicate a lack of confidence in the floor leadership which he has given the Democrats for the past 21 years.

On the plus side of McCormack's ledger is the fact that he probably won some conservative friends by allowing them to freeze back-door spending on the final night of the session, and from the deal he is supposed to have made with the foreign aid opponents. He also won a number of friends by getting the members away early on the closing night by beating down controversial amendments with his gavel.

Some others generally considered contenders for the speakership are Francis E. Walter of Pennsylvania, who is a top parliamentarian, but who is very unpopular with the liberals; Wilbur Mills of Arkansas who probably could not pull much support except in the South; and Richard Bolling of Missouri who is young (45) has only 13 years of service in the House, and is too liberal for the conservatives to support.

All things considered, McCormack looks like an odds on favorite to sweep the race.

While Attorney General Robert Ken-

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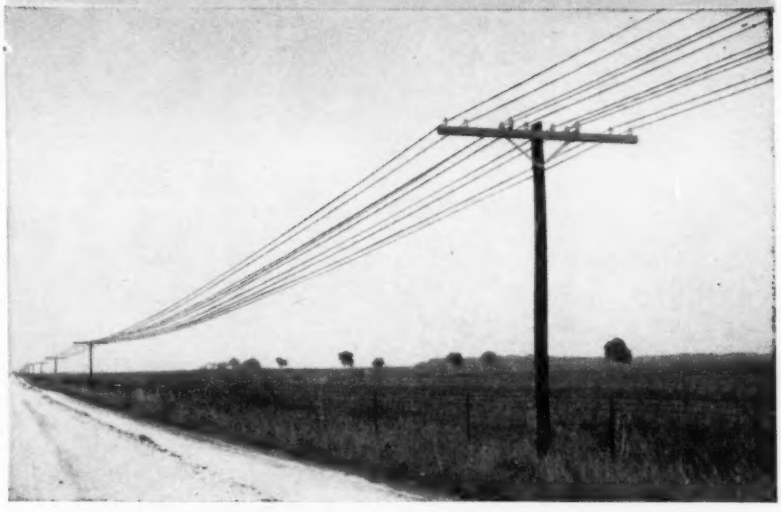

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nedy and others who bear the responsibility for law enforcement want to loosen the tight reins on wire-tapping, a New York judge has recommended that use of a telephone in furtherance of an illegal act be made a separate crime and that wire-tapping be outlawed under New York State law.

State Supreme Court Justice Samuel H. Hofstadter told a joint New York legislative committee on private communications:

"Law enforcement officials and prosecutors complain that criminals use modern devices to further their illegal operations while they are handicapped in making use of similar expedients. The solution is not to permit the forces of law and order to resort to methods which offend the moral sensibilities of our people, but rather to impose the obstacle of severe sanctions to criminal use of modern science."

Judge Hofstadter said penalties should be as severe for anyone using a telephone "to advise or initiate, to aid or abet, the commission or execution of any illegal act," as those for the illegal act itself. He suggested such a law be modeled after the federal prohibition against unlawful use of the mails.

The legislative committee had completed its work in June when the United States Supreme Court ruled that wire-tapped evidence was inadmissable in state as well as federal courts. Previously, wire-tapping has been permissible under court order in New York. The committee reopened its hearings because of confusion and uncertainty raised by the U. S. Supreme Court decision.

Justice Hofstadter, in speaking of wire-tapping and other electronic eavesdropping devices, said, "They are too dangerous to be entrusted to any human hands. Our people no longer feel safe anywhere, in their offices, shops, factories, even on the streets or in their homes. They are in terror of the sinister devices—the spawn of technological ingenuity—which constitute an ever-present threat to their privacy, their peace and dignity."

Monroe to Western Region Sales for Union Carbide

K. C. Monroe has been assigned as a technical sales representative in the Western sales region of Union Carbide Plastics Co., Division of Union Carbide Corp.

According to the announcement by T. R. Orme, regional manager, Mr. Monroe will be responsible for the sale of Krene brand vinyl film and sheeting and Bakelite brand polyethylene, vinyl, polypropylene, styrene, and phenolic resins and compounds for molding, extrusion and calendering fabrication uses. He will be located in the San Francisco sales office at 22 Battery St.

Mr. Monroe was graduated from the University of Wisconsin with a bachelor of science degree in mechanical engineering in June of 1960. He joined Union Carbide Plastics Co. later that same month and completed an extensive sales training program at the company's Research & Development Center at Bound Brook, N. J. Since April of 1961, he has been assisting in the Milwaukee, Wis. sales office.

Lang RCA Midwest Sales Representative for Microwave

Appointment of James A. Lang as sales representative for a newly-created RCA microwave sales territory covering 13 midwestern states was announced on Nov. 14 by W. C. Byrne, marketing manager, microwave department, Radio Corporation of America.

Mr. Lang, whose headquarters will be in Chicago's Merchandise Mart, joined RCA recently after two years as section sales manager for Motorola Communications & Electronics, Inc., in Los Angeles, Cal. Previously, he had spent nine years in sales and in microwave development and systems engineering for the firm.

A native of Chicago, Mr. Lang began his sales-engineering career as an apparatus engineer for the Automatic Electric Co., Chicago.

He was graduated from the University of Colorado with a bachelor's degree in electrical engineering and is a member of the Institute of Radio Engineers.

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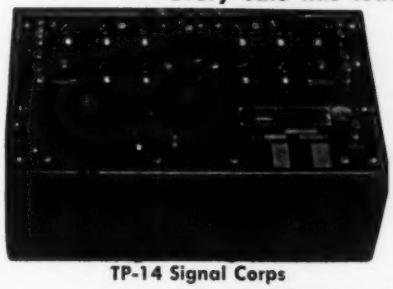

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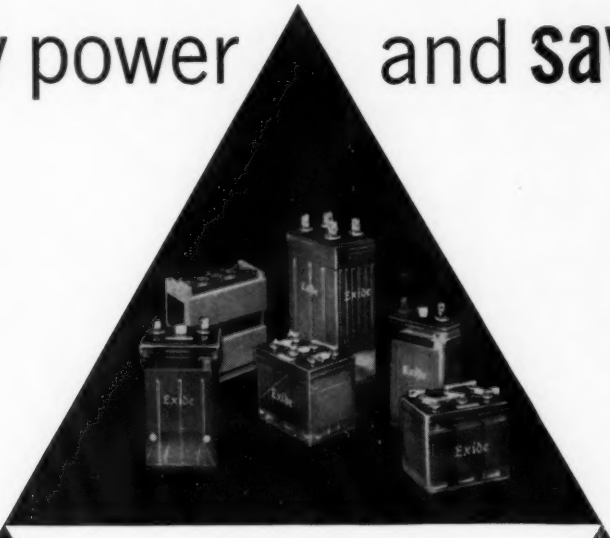

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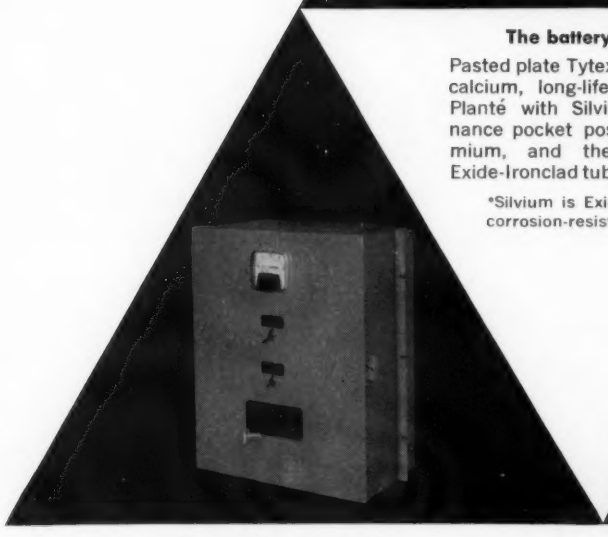

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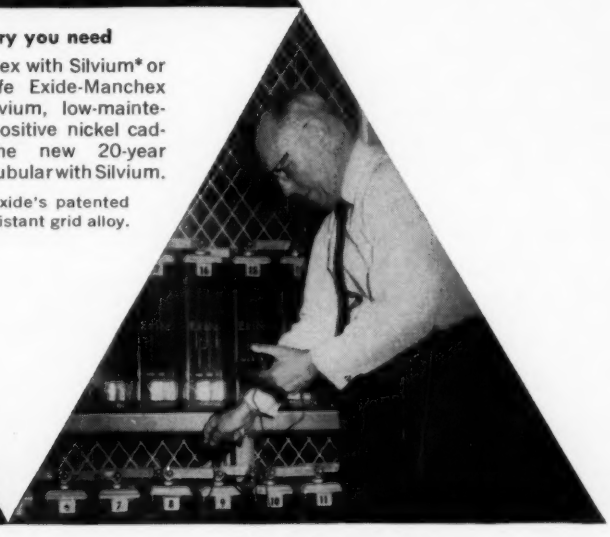

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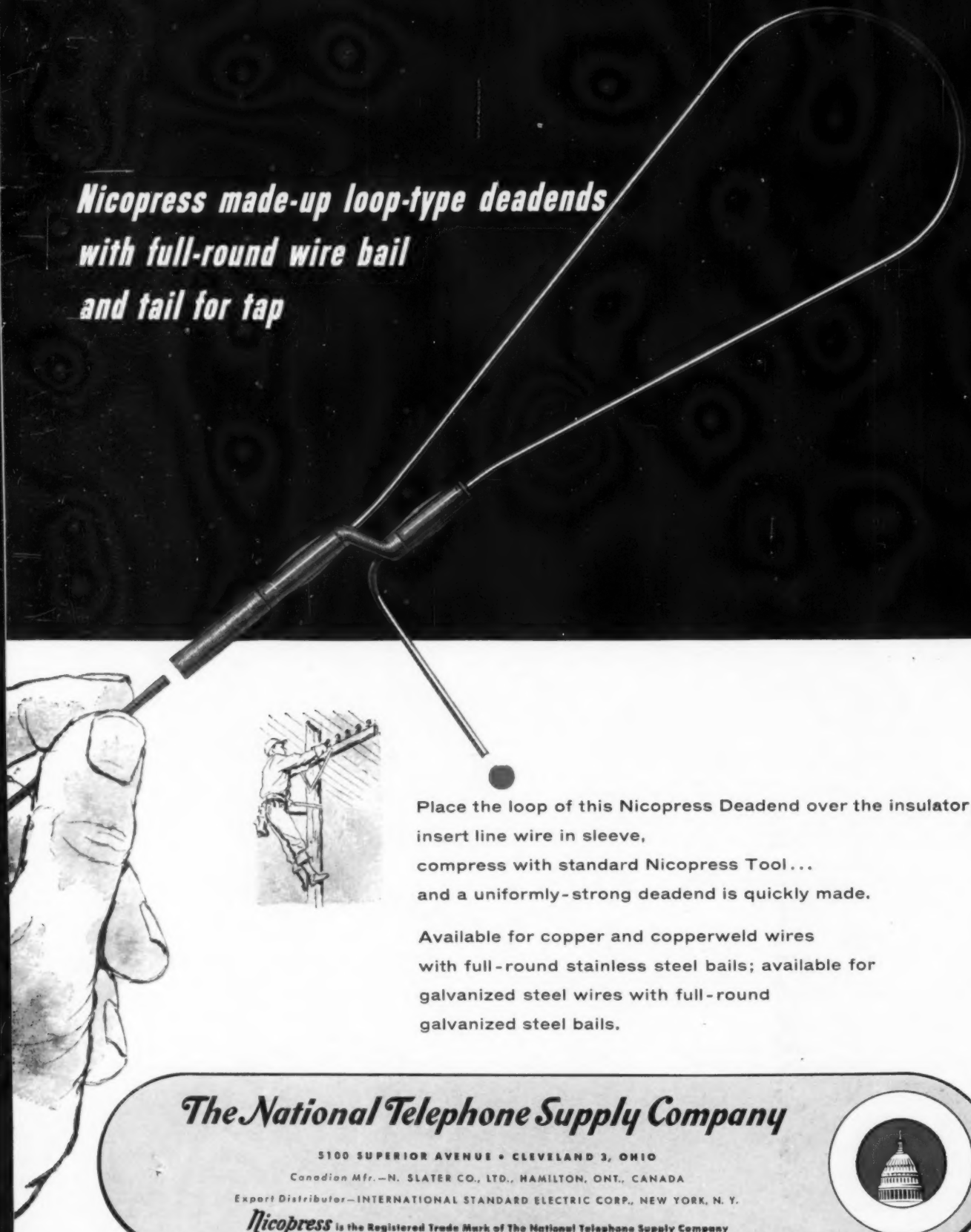

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